THE WORTH OF IMMIGRANTS" EDUCATIONAL CREDENTIALS

IN THE CANADIAN LABOUR MARKET

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ABSTRACT

The literature has reported that immigrants' foreign credentials have been undervalued in Canada. However, the extent to which immigrants' credentials attained in different world regions have been valued or undervalued is unclear. This study uses data from the 2002 Ethnic Diversity Survey to assess the worth of immigrants' educational credentials in Canada, taking into account different fields of study.

The major findings indicate that there were significant gross and net earnings disparities among immigrant men and women with educational credentials attained in different world regions. Foreign credentials from the US and Northern and Western Europe of immigrant men and those from the USA and all parts of Europe of immigrant women had an earnings advantage compared to immigrants whose credentials were from Canada.

The results also suggest that immigrant men with foreign credentials in health fields and in commerce, management and business administration had the greatest difficulties to getting their foreign credentials recognized. Similar to immigrant men, foreign education of immigrant women in the fields of commerce, management and business administration as well as in natural, applied sciences and engineering was the most devaluated compared to women with Canadian credentials. In addition, both immigrant men and women with education from the USA and Northern and Western Europe irrespective of the field of study had the best chance to enjoy an earnings premium over their counterparts with Canadian education. The relationship between education and earnings among Canadian immigrants is further explained using a political economy perspective of racialization.

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1. INTRODUCTION

Immigration has been a central component in the nation building and social development of Canada. Immigration has contributed to the ethnic heterogeneity of Canada. Its citizens originate from countries of different origins and cultural backgrounds. Canada is an immigrant society in two ways. First, its formation, history, and development are closely linked to immigration. Second, the majority of Canada's existing population consists of the descendents of earlier immigrants and of current immigrants. In the immigration discourse, the value of immigrants has been usually assessed in terms of their ability to benefit and to enrich native-born Canadians. It is difficult to determine economic benefits of immigration to Canada. However, many studies have demonstrated that immigrants contributed to Canada in different ways, and the country has benefited from immigration (Li 2003).

Today, highly educated immigrants continue to contribute to Canada's competitive strength in a global market place. There is a widespread believe that education is a key determinant of an individual's economic success in society (Immigration Act 2001). People's human capital is considered as a resource, which can be exploited effectively and can be profitable for individuals and society as a whole. However, various structural constraints exist in society. Canadian society is also highly stratified according to inequalities of class, gender, race and ethnicity, region and many other social factors (Wotherspoon 2009: 225-226).

Immigrants with foreign educational credentials face numerous barriers in the Canadian labour market. Their foreign educational credentials are highly devaluated. The economic cost of underutilizing foreign education in Canada is considerable. The cost of not fully using immigrants' skills has been estimated "from $2.4 to $5.9 billion in lost income annually" (FCRD 2008: 15). This means that even though Canada draws the best from other countries, it does not use the talent of immigrants very effectively. The alarming waste of immigrants' talents has prompted many interests in understanding the nature of structural constraints that affect

immigrants' economic performance, including the impact of foreign credentials on immigrants' earnings.

The research question of this study is to assess the worth of immigrants' educational credentials attained in different world regions in the Canadian labour market. In addition, the study attempts to understand the value of immigrants' credentials in different fields of study.

The findings of this study have both academic and policy implications. Undervaluing immigrants' credentials suggests that Canada's immigrant selection system may only succeed in getting immigrants with credentials, but not in realizing the full value in the labour market. Furthermore, the results of the study can help organizations and community agencies, working with immigrants, to consult immigrants more effectively about how they can become more successful in the Canadian labour market. In addition, the present study complements to the body of literature on immigrants' credentials. Its findings can be used as the basis for the future research on the role of education in immigrants' economic performance.

Initially, the study presents some main findings from the existing literature on the effect of immigrants' educational credentials on their earnings. Then, it indicates what theoretical framework is used to explain disparities in income distribution among immigrants with education from different world regions. Next, it discusses the method and data used in this study. The final sections of the study provide the analysis of major findings and conclusions on the market worth of immigrants' educational credentials attained in different world regions and on the value of immigrants' credentials in different fields of study.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Numerous studies have been conducted to examine the economic performance of immigrants in Canada. The devaluation of immigrants' human capital in terms of formal education has been considered as one of the major factors that influence immigrants' earnings in the Canadian labour market.

2.1. Immigrants as a Heterogeneous Entity

In order to investigate educational inequality associated with immigrants in Canada, it is necessary to recognize that immigrants are not a homogeneous entity. First of all, immigrants to Canada are admitted under various classes: independent or economic class, which also includes such groups as assisted relatives and business immigrants, family class, Convention refugees, and the designated class (De Silva 1997).

The family class consists of the immediate members of the family (spouses, fiancés, dependent children, and parents and grandparents who will not enter the labour force) while assisted relatives include other relatives. Convention refugees include refugees defined as such under the 1951 United Nations Convention, "a class of individuals who have left their country and cannot return because of a well-founded fear of persecution for reasons of race, religion, nationality, group membership or political opinion" (Johnson 2006: 53). The designated class also includes people in refugee-like situations, but who are not qualified under the UN definition of a refugee. It is important to mention that the independent class is required to obtain the necessary number of points to pass a selection test whereas the family class, Convention refugees, and the designated class are admitted under humanitarian considerations. Consequently, immigrants who are selected according to the point system are expected to perform better economically than those who are accepted according to the humanitarian reasons.

Next, many ethnic and racial origins are found among immigrants in Canada. The rapid growth of the visible minority population was triggered by the changes in immigration

regulations in 1967 that have led to the shift in the principal source countries from European to non-European and to the shift in the ethnic origins of immigrants. The term *visible minority* received official recognition by the Royal Commission Report on Equality in Employment of 1984, in which visible minorities were identified as one of the designated groups (Li 2003). In the 1986 census, Statistics Canada defined visible minorities as people belonging to the following ten origins: Blacks, Indo-Pakistani, Chinese, Korean, Japanese, South East Asian, Filipino, Other Pacific Islanders, West Asian and Arab, and Latin American, excluding Argentinean and Chilean. By the 1996, the percentage of visible minorities had reached about 11.2 per cent of Canada's total population (Li 2003: 36). While by 2001, their percentage increased to 13.4 per cent, by 2006, 16.2 per cent of the total Canadian population were visible minorities (Statistics Canada 2008).

2.2. Educational Attainments of Immigrants and Native-born Canadians

Since it is typically believed that education is the major factor for success in the labour market, it is important to compare immigrants and native-born Canadians in terms of their educational attainments. The results common to many studies demonstrate that immigrants' educational levels are not less than those of their native-born counterparts. With regard to university education, immigrants are even ahead of the native-born Canadians.

According to De Silva (1992), the percentage of immigrants with a university degree, who came to Canada in the 1980s, is higher than the percentage of native-born Canadians with the same degree. Moreover, when the educational levels of immigrants by country of origin are considered, immigrants from non-European countries, except for the Caribbean and South and Central America, comprise higher proportions of persons with university education than immigrants from all of the traditional immigrant countries, excluding the United States (De Silva 1992: 7).

According to Li (2003), the proportion of immigrants with university education has increased since 1995. For example, by 1996, immigrants with university degree made up 35 per cent of all adult arrivals in that year, and by 2000, 44 per cent of immigrants 15 years of age or older came with at least one university degree (Li 2003: 103-104).

Then, statistics demonstrate that 46 per cent of immigrants, who arrived in 2002, had university degrees. Controlling for age, the number of immigrants who hold university education was twice as the number of native-born Canadians with university degrees. In addition, immigrants were more likely to have master's degrees and doctorates (Ngo and Este 2006:28). Similar trend in immigrants' educational attainments was indicated until 2009 (Citizenship and Immigration Canada 2009).

2.3. Devaluation of Immigrants' Educational Credentials

A number of studies have examined the returns to immigrants' education in the Canadian labour market in comparison to the returns to native-born Canadians' education. For example, Marr (1976), using data from Statistics Canada's 1973 microdata file on labour mobility, analyzes the earnings disparities between foreign-born and Canadian-born men in Ontario. He finds out that for persons with 14 or more years of education, the earnings of the Canadian-born were found to be almost 50 per cent higher than for the foreign-born Canadians. He concludes that the amount of discrimination grows with the level of education (cited in De Silva 1992: 19).

Boyd (1985), using 1973 Canadian Mobility Survey, studies the differences between Canadian-born and foreign-born male-workers in the acquisition of occupational status. She argues that the Canadian-born receive a greater return for their education, compared to the foreign-born males because of "the difficulties of transferring educational skills across national boundaries" (Boyd 1985: 405).

De Silva (1992), who based on the census data for 1981 and 1986, also states that native-born Canadians had higher returns to their education than immigrants.

Pendakur and Pendakur (1998), using data from the 1991 census, conclude that immigrant men, including white and visible minority men, had earnings penalties in comparison to Canadian-born white men. The same pattern was observed for immigrant women (Pendakur and Pendakur 1998:520).

The research based on later data also comes to similar conclusions about the devaluation of immigrants' formal education. Reitz (2001a), using the 1996 Canadian census, addresses the problem of underutilization of immigrant skills in the Canadian labour market. He asserts that immigrants receive a smaller earnings premium for formal education, compared to the native-

born Canadians. In fact, a generalization that can be drawn from his research is that the estimated return to a year of schooling for immigrants is about half that accruing to the native-born (Wald and Fang 2008: 460).

Li (2001) also uses the 1996 Canadian census microdata to compare the earnings of native-born and foreign-born Canadians. His analysis is focused only on the type of university credentials. Li constructs a typology of four kinds of degree-holders: native-born Canadian degree-holders; immigrant Canadian degree-holders; immigrant mixed education degree-holders; and immigrant foreign degree-holders, controlling for race and gender, which often interact with the type of credentials. One of his findings indicates that immigrants' credentials carry a penalty, compared to those of native-born Canadians (Li 2001: 33-34).

Using the 1996 census of Canada, Anisef, Sweet, and Frempong (2003) in their study on the effect of fields of study and educational credentials on earnings also indicate that immigrants who obtained their credentials abroad earned significantly less than non-immigrants.

Furthermore, using the 1981 to 2001 census data, Ferrer and Riddell (2008) study how the human capital of immigrants is rewarded in Canada. The particular interest in their paper is differences between immigrants and native-born Canadians in the return to years of schooling and to program completion. They argue, similar to other studies, that immigrants receive lower returns to years of schooling than native-born Canadians.

Trying to address the problem of overeducation of recent immigrants in the Canadian labour market, Wald and Fang (2008) examine the data from the 1999 Workplace and Employee Survey to explore the determinants and earnings consequences of overeducation. They come to the conclusion that recent immigrants, compared to the Canadian-born workers, are found to have a relatively high incidence of overeducation and to earn relatively low returns for surplus schooling. To sum up, the general findings indicate that immigrant men and women typically earn less than native-born Canadians when differences in schooling are taken into account. Consequently, the literature suggests that immigrants' foreign credentials have been discounted in the Canadian labour market in comparison to the educational credentials of native-born Canadians.

2.4. The Market Worth of Immigrants' Foreign and Canadian Credentials

On the other hand, it is meaningful to distinguish between the value of immigrants' education obtained abroad and immigrants' education obtained in Canada. A number of studies have examined the effect of foreign and Canadian education on immigrants' earnings. As Ferrer and Riddell point out, there are "noteworthy differences between foreign and Canadian-educated immigrants" (2008: 203). It should be mentioned that since the Canadian censuses do not provide data on where exactly immigrants obtained their credentials, researchers who use the census data attempt to assume what type of credentials immigrants have by taking into account the age of immigrants at the time of arrival and the number of years of residence in Canada.

Using data from the 1971 census, Tandon (1977, cited in De Silva 1992) studies the differences in earnings between native-born and immigrant adult males in Toronto. He found that the effect of Canadian schooling on immigrant earnings is more significant than schooling acquired abroad.

De Silva (1992) uses the 1986 census data to create models to explore earning differences between immigrants who immigrated before six years old and, as a result, had to complete their education in Canada and immigrants who had "fewer years of residence in Canada" than "years of total estimated work experience", and, therefore, had to obtained education before immigration. His findings demonstrate higher returns for immigrants' Canadian education and experience, which are comparable to the returns of matched age groups of native-born Canadians, and lower returns for immigrants' foreign education and experience. De Silva concludes that "foreign education is not valued as highly as Canadian in the Canadian market" (1992: 28).

In contrast to De Silva, who does not distinguish between immigrants with university degrees and those without such degrees, Li (2001) highlights only university credentials in his analysis, which is based on the 1996 census data. His main concern is whether foreign degrees have lower market worth than Canadian degrees, and whether immigrants with Canadian degrees "have earning parity with native-born degree-holders" (Li 2001: 27). Li provides a typology of degree-holders taking into account the age at immigration, which is reported as a range in the census. He divides immigrants into three categories: (1) immigrant Canadian degree-holders, who immigrated to Canada before age 13 and, probably, obtained the university degree in

Canada; (2) immigrant mixed education degree-holders, who immigrated between the ages of 13 and 24 and could obtain some education outside Canada and some inside Canada; and (3) immigrant foreign degree-holders, who immigrated at the age of 25 or older and more likely obtained degree outside Canada. His findings demonstrate that among immigrants, immigrant Canadian degree-holders had the highest earnings, followed by immigrant mixed education degree-holders whereas immigrant foreign degree-holders had the lowest earnings (Li 2001: 31-32). It can be concluded that studies which have attempted to distinguish between immigrants' foreign and Canadian credentials have found that foreign education of immigrants is devaluated in the Canadian labour market more than Canadian education of immigrants.

Then, Schaafsma and Sweetman (2001), using 1986, 1991, and 1996 Canadian census data, observe that immigrants who came to Canada as adults and obtained education abroad had significantly lower return to their education than immigrants who arrived in Canada as children and attained Canadian credentials, and whose return to education was comparable to that of native-born Canadians. Nakhaie (2008), who used data from the Ethnic Diversity Survey (2002), also points to the benefits of Canadian credentials over foreign credentials of immigrants. He states, for example, that men who obtained their highest degree in Canada earned more than those with foreign highest degree (Nakhaie 2008: 314).

However, immigrants' foreign credentials themselves have different market worth in Canada. In a more recent study, Li (2008) tries to elaborate the analysis of the effect of foreign credentials on immigrants' earnings, comparing immigrants of different racial and ethnic origins. He uses data from the Ethnic Diversity Survey (2002), which, in contrast to census data, provide exact information on where immigrants obtained their credentials, in Canada or specific regions outside Canada. He analyzes the difference in market value of foreign credentials between the majority and minority member immigrants. Li argues that " compared to immigrants with Canadian credentials, the foreign credentials of immigrant men of majority member background were an advantage in earnings, but those of immigrant men of visible minority background were a disadvantage" (2008: 301). As a result, Li points out that the tendency in the literature to view all foreign credentials of immigrants as being discounted in Canada is not completely correct.

2.5. Devaluation of Immigrants' Educational Credentials: Structural Barriers

The findings of existing research suggest that different types of barriers that immigrants encounter in the Canadian labour force contribute to the devaluation of their educational credentials. Among such barriers, structural factors can be considered to be significant. Structural factors related to policies, criteria and evaluation procedures of foreign credentials contribute to income disadvantages for foreign-trained immigrants. In other words, institutions fail to recognize immigrants' education obtained abroad. Therefore, one of the factors that explain the existent devaluation of immigrants' education is the problem of full recognition of foreign credentials.

Reitz (2001a) defines several distinct types of non-recognition of immigrants' foreign education. First, Canadian licensing bodies for professions and trades do not recognize foreign professional or trade credentials. Immigrants are rejected a parallel license for work in Canada. It is principally associated with such professions as physicians, nurses, and professional engineers. Second, the employers do not recognize foreign professional or trade credentials even for immigrants who have received Canadian licenses. In this situation, Canadian licensing bodies issue the licenses, but employers still believe that immigrants' foreign background is not equal to the corresponding Canadian background. Third, employers do not recognize immigrants' foreign credentials in non-licensed occupational fields. It is widely related to such fields as business management and various so-called semi-professions. Canadian employers might require a specific educational background and might not consider a comparable foreign degree to be equal to the Canadian degree. Finally, Canadian employers fail to recognize general foreign education. In many occupational fields in which employers may require a general education such as in sales supervision fields, lower level management, public relations, and policy analysis, there is a tendency to evaluate foreign education lower than Canadian one. Moreover, negative perceptions about immigrants' foreign education affect not only hiring practices but also promotions (Reitz 2001a: 351-352).

Two main approaches have been used in the literature to study structural barriers related to non-recognition of immigrants' foreign education. The first approach focuses on policies, regulations, evaluation procedures, and agencies which provide the assessment of foreign education. McDade (1988) conducted a study following this approach. McDade describes the

nature of barriers to recognition of foreign credentials in the trades and professions. The findings suggest that in trades and many professional fields, foreign-trained immigrants often have to meet more requirements to receive professional certificates in comparison to persons trained in the same fields in Canada. For example, in Ontario, foreign-trained immigrants in trades were required to attain more work experience before getting a permission to take qualification exams than persons trained in the province. Immigrants' training in their home countries often was not considered as adequate experience (McDade 1988: 9-11). In many professional occupations, any formal training and practical work experience obtained outside the province were not recognized and were expected to be repeated in the province. In the medical professions, internship programs as the final step in the certification process were largely restricted for immigrants with foreign credentials (McDade 1988: 13). In engineering, foreign-trained professionals also were required to have more experience than Canadian graduates. For instance, in British Columbia, Canadian-trained engineers were required to obtain two years of practical training after completion of an undergraduate degree in engineering whereas foreign-trained graduates of accredited schools had to have three years of satisfactory experience (McDade 1988: 18-19). Thus, McDade's research clearly suggests that there is a problem with recognition of foreign credentials.

The second approach to study structural barriers dealing with non-recognition of immigrants' foreign education focuses on examining perceptions and experience described by foreign-trained immigrants. A number of studies have been conducted following this approach by using quantitative research methods as well as qualitative ones. Basran and Zong (1998), for example, study immigrants' perceptions about the devaluation of their education mostly by applying the techniques of quantitative research. They surveyed foreign-trained Indo and Chinese-Canadian professionals who were residents of Vancouver, B.C., in 1997. Their findings show that a great number of visible minority professional immigrants have experienced downward social mobility in Canada, and their human capital has been underutilized. Seventy three per cent of these foreign-trained professionals experienced downward mobility after immigration (Basran and Zong 1998: Table 2). Moreover, the majority of immigrants explained their occupational disadvantages by non-recognition of their education. Seventy nine per cent of

respondents reported that they had difficulties with recognition of their foreign credentials in Canada (Basran and Zong 1998: Table 2).

The results, similar to the conclusions made by Basran and Zong (1998), can be found in the study conducted in 1998 by Krahn, Derwing, Mulder, and Wilkinson (2000). Using survey and interview techniques, they explore occupational mobility of refugees who were settled in the province of Alberta between 1992 and 1997, and who hold professional or managerial positions before coming to Canada. These researchers also find out that the problem with recognition of foreign credentials is one of the significant reasons that cause immigrants' downward occupational mobility in Canada. According to their data, 36 per cent of the respondents, who came to Canada with educational credentials, experienced difficulties in getting recognition of their foreign education. However, among people who worked at managerial or professional jobs by the time they were interviewed, 44 per cent of respondents stated the problem with credential recognition (Krahn et.al. 2000: 74).

Findings from Grant and Nadin's study (2007) support the conclusions made by Basran and Zong (1998) as well as Krahn et.al. (2000). Skilled immigrants from Asia and Africa, who were experiencing difficulties with recognition of educational credentials, were asked to fill out the questionnaire that included quantitative and few qualitative questions. The results indicate that the majority of the respondents experienced downward occupational mobility since arriving to Canada. Only about 30 per cent of respondents had their qualification assessed by qualification assessment agencies, but only about 12 per cent of them stated that the assessment helped them in the Canadian labour market (Grant and Nadin 2007: 154).

In addition, some qualitative studies address the problem of non-recognition of immigrants' foreign education. McCoy and Masuch (2007), for instance, focus on the issue of foreign education recognition by analyzing the experience of immigrant women who had post-secondary education and work practice in non-regulated business administration occupations, and who recently settled in Calgary, Alberta. One of their conclusions demonstrate that, as a rule, highly educated immigrants get additional educational credentials in Canada in order to have an opportunity to enter the higher level professional employment even though these immigrants already have qualifications and skills required by the labour market (McCoy and Masuch 2007: 201). Ngo and Este (2006), using grounded theory approach, also conducted several in-depth

interviews with immigrant professionals to understand the process of their re-entry as professionals in the Canadian labour market. They analyze how immigrants encounter difficulties with recognition of their education obtained abroad, and how they try to overcome structural and personal barriers to back to their professions in a new country. As a result, the studies, which applied different methodologies and approaches, show that non-recognition of foreign credentials has affected the devaluation of immigrants' human capital and their economic performance in Canada.

The exact number of professional immigrants whose credentials are not fairly evaluated in Canada is not known. However, a study conducted in Manitoba in 1995 indicates that the education of 52 per cent of clients who were in regulated professions, and who received social assistance between 1989 and 1994, were not recognized for their foreign credentials (cited in Basran and Zong 1998: 3).

Today, the problem with non-recognition of foreign credentials still exists in Canada. As Diane Finley, the Minister of Citizenship and Immigration, in 2007 mentioned: "Too often, however, immigrants encounter roadblocks to employment in their field when they cannot put their credentials to work in Canada" (FCRO 2008). Provinces and territories are mostly responsible for credential assessment. Recognition processes vary from province to province. There are five provincially mandated assessment agencies that evaluate international academic credentials. These agencies are the members of the organization "The Alliance of Credential Evaluation Services of Canada". In addition, several colleges and universities offer academic assessment. Regulatory and professional organizations also may evaluate credentials for the purposes of certification or licensing (FCRO 2008: 4-14). However, "the process and standards for assessment and recognition are uneven, and overseas credentials can be under-valued" (FCRO 2008: 15).

2.6. The Market Worth of Educational Credentials among Visible Minority Immigrants

The factors such as race, ethnicity, and country of origin can be also considered to be very significant in their impact on the devaluation of immigrants' educational credentials. A number of studies, using different data, have made similar claims that visible minority

immigrants are more disadvantaged in economic performance than white or majority member immigrants, after controlling for their education and other features.

Reitz and Sklar (1997), using a survey of ethnic groups, conducted in 1979 in Toronto, examine occupational status and earnings effects of ethnic attachments among men and women in seven ethnic and racial minority groups, controlling for foreign and Canadian acquired human capital. They argue that racial minorities experience substantial occupational and earnings disadvantage.

Satzewich and Li (1987) study the effect of ethnic origin on occupational status and income, using longitudinal data for immigrants. The data were collected by the Department of Manpower and Immigration during the period 1969-1974. Similar to Reitz and Sklar (1997), the findings of their research indicate income discrimination for non-white immigrants, after adjusting for differences in a set of variables.

Bloom, Grenier, and Gunderson (1995), based on the analysis of the 1971, 1981, and 1986 Canadian censuses, mention that immigrant men from Asia, Africa, and Latin America experience very strong negative entry effects after immigration. Thus, for them "catch up does not occur for forty-three years, compared with eleven years for European and US immigrants" (Bloom, Grenier, and Gunderson 1995: 997).

Pendakur and Pendakur (1998) have conducted a special study to explore earnings differentials between whites and visible minorities and, on the other hand, earnings differentials within the white and visible minority groups. Their analysis of differentials between whites and visible minorities suggests that the visible minority category can be viewed as a useful indicator of economic discrimination. Pendakur and Pendakur argue that "economic discrimination may play an important role in Canadian labour markets" because earnings gaps have been discovered not only among immigrant ethnic groups but also among Canadian-born ethnic groups (1998: 544).

The analysis, based on the 1996 census data, conducted by Reitz also demonstrates that immigrant men who originate outside Europe such as Blacks from Africa and the Caribbean, Chinese, South Asian, Filipinos, and other Asians earn between 15 and 25 per cent less than most of the European origin immigrants (2001a: 367).

Li (2001; 2008) has conducted several studies to examine the devaluation of immigrants' formal education taking into account race and ethnicity. Similar to Reitz (2001a), he has analyzed the 1996 Canadian census data. Li (2001) argues that when gender and racial origin are controlled, foreign degree affects the earnings of visible minority women and men more adversely than the earnings of white Canadians. In the later study, Li (2008) has used data from the Ethnic Diversity Survey (2002) to investigate how foreign credentials influence immigrants' earnings. He compares the earnings of seven racial and ethnic origin groups, which include four visible minority groups made up of Chinese, South Asian, Black, and other visible minorities, and three majority groups made up of British, North and West Europe, and other majority members. His findings show that the market value of foreign education depends on the racial background of the immigrants.

Nakhaie (2007) uses the Ethnic Diversity Survey, similar to Li (2008), to examine the differences in earnings among several ethno-racial groups. His findings support the general observation about immigrant visible minorities as the most disadvantaged group in the Canadian labour market. Consequently, despite the fact that, in general, immigrant visible minorities are highly educated and well-represented in the fields of study with potential high earnings, their average earnings are far below that of native-born Canadians and majority member immigrants (Anisef, Sweet, and Frempong 2003).

Even though the literature suggests that the factor of race and ethnic origin can adversely affect immigrants' earnings, it is not always clear whether it is racial origin, credentials, or other features that are disadvantaged. It seems that studies that analyze self-reported immigrants' experiences of discrimination demonstrate more explicitly how race and ethnicity influence the devaluation of immigrants' human capital. For example, Basran and Zong, who surveyed foreign-trained Indo- and Chinese-Canadian professionals in Vancouver, have reported that 65 per cent of respondents perceived discrimination on the basis of their skin colour, and 69 per cent mentioned national or ethnic origin as the factors that influenced the evaluation of their human capital (1998: 12). In other words, Basran and Zong argue that visible minority immigrants in professional fields attributed their downward social mobility in Canada also to the problem of discrimination based on ethnic or racial origin. In sum, the studies suggest that visible minority immigrants do not have the same chances in the Canadian labour market as majority member

immigrants. Race, ethnicity, and country of origin can be considered to be an important factor that affects the devaluation of immigrants' human capital in Canada.

2.7. Devaluation of Immigrants' Educational Credentials: Personal Barriers

A number of important personal or individual barriers also should be taken into account, together with structural barriers, that affect the devaluation of immigrants' educational credentials in Canada.

First of all, it is commonly accepted in the literature that women are more disadvantaged in the labour force and have lower income in comparison to men. Canadian society is also highly stratified according to inequalities of gender (Wotherspoon 2009: 234-240). Women are one of the designated groups for the purpose of the Employment Equity. As a result, the majority of studies, regarding immigrants' economic performance in Canada, examine the earnings of men and women as separate statistical models instead of including gender variable in the models (Li 2001, 2008; Nakhaie 2007; Pendakur and Pendakur 1998).

Another important personal characteristic that influences the worth of immigrants' foreign credentials in Canada is the level of education that each individual has. In spite of the fact that immigrants receive lower returns to years of schooling than native-born Canadians, among immigrants, individuals with higher level of education often tend to perform better in the labour market. According to Ferrer and Riddell (2008), immigrants with completed educational programs earned more than immigrants without a degree, even if their earnings were still lower than for native-born Canadians. Li's study (2001) also shows that immigrants with higher than undergraduate degree had a net earning advantage, compared to those with only the Bachelor degree.

Then, immigrants' knowledge of official languages is also should be taken into account. Li's study (2001), for example, demonstrate that university degree-holder immigrants who were unilingual in English or bilingual in English and French had the highest earnings, followed by those unilingual in French. Immigrants who spoke neither official language had the largest earning disadvantage. On the other hand, language proficiency can be considered as a significant barrier that causes the devaluation of immigrants' formal education. Scassa (1994) argues that immigrants encounter discrimination in employment on the basis of their language

characteristics such as their accent of speech and lack of fluency. According to some research findings based on the materials from Sweden (Rooth and Saarela 2007), among two groups of immigrants who came from the same country and possessed similar characteristics, excluding a mother tongue, the group of immigrants whose mother tongue was the same as the mother tongue of natives in the host country had significantly higher income than the other group of immigrants whose first language was different, compared to native-born population. Consequently, language is an essential part of immigrants' human capital.

Next, the factor such as age at immigration seems to be a very important indicator in the devaluation of immigrants' human capital in Canada. Using 1986, 1991, and 1996 Canadian census data, Schaafsma and Sweetman (2001) have examined the impact of age at immigration on men employment earnings. They found that the return to human capital varies with age at immigration. Those who arrived later in life experience low returns to both foreign education and foreign work experience. De Silva (1997) also claims that the younger the immigrant at the time of landing, the greater their chances of doing well in this country. . Anisef, Sweet, and Frempong (2003) come to similar conclusions that immigrants who came to Canada at older ages with foreign credentials had worse chances to succeed in the Canadian labour market. In sum, personal characteristics as well as structural barriers have contributed to the devaluation of immigrants' education in the Canadian labour market.

2.8. Devaluation of Immigrants' Credentials in the Context of Immigrants' Cohorts

Another important key observation in the literature about the devaluation of immigrants' education concerns the problem that immigrants to Canada in the 1980s and 1990s earned less than immigrants who arrived in earlier decades. Despite the fact that more recent cohorts of immigrants have higher educational level, their human capital has been more underutilized. The literature provides several explanations why the human capital of recent immigrants has been more devaluated, compared to the earlier arrivals.

Reitz (2001b) examines the impact of educational and labour market changes on successive cohorts of immigrants, using 1981, 1986, 1991, and 1996 census data. He argues that over the period 1971-1996, the earnings success of newly arriving immigrant men and women in Canada has been significantly eroded. Reitz points out that the level of education of native-born

Canadians has increased. This has led to increased returns to education among native-born workers. On the other hand, immigrants encounter different institutional obstacles that prevent their success. For this reason, in the last decades, "not only are immigrant skills discounted, but the extent of this discounting has increased" (Reitz 2001b: 602).

Another significant factor addressed by the literature in the context of the devaluation of recent immigrants' human capital is the compositional shift of immigrants from European to non-European source countries mainly from Asia and Africa. Bloom, Grenier, and Gunderson (1995) emphasize the shift from industrial to developing countries, from which immigrants are more likely to be visible minorities. The compositional shift means that more recent immigrants to Canada have more diverse language features, foreign credentials, and experiences than earlier immigrants of primarily European origin. Aydemir and Skuterud (2005) discover that one-third of the decline in entry earnings of immigrant cohorts between 1981 and 2001 is explained by compositional shifts in language ability and region of birth.

2.9. Some Policy Initiatives to Decrease the Devaluation of Immigrants' Educational Credentials

There are some policy initiatives introduced in Canada by federal and provincial governments to decrease educational inequality associated with immigrants.

In May 2007, for example, the Foreign Credentials Referral Office (FCRO) was organized as part of Citizenship and Immigration Canada to improve the situation related to assessment of immigrants' education obtained abroad. Newcomers to Canada can access information, path-finding and referral services through the FCRO website, over the telephone and in person at 320 Service Canada centres across the country. Moreover, some overseas services were opened in China, India, and the Philippines to help prospective immigrants to complete the process of the recognition of their credentials before coming to Canada (FCRO 2008). Consequently, the main purpose of the FCRO is to provide better information for newcomers who face a challenge to find out where and how to have their credentials assessed and recognized. However, the process, principles, and standards for evaluation of foreign

education have not changed. Therefore, immigrants' education obtained outside Canada will continue to be devaluated.

Then, different English (French) as a second language (ESL/FSL) services for immigrant adults have been organized across Canada to help immigrants to improve their language proficiency and overcome one of their personal barriers that affect the devaluation of immigrants' foreign education. In the 1990s, the majority of language programs were replaced by a new general program called Language Instruction for Newcomers to Canada (LINC). LINC has been introduced to provide "basic language instruction to adult newcomers in English and French" (LINC 1997: 1) and "to achieve a uniform quality of language training across the country" (LINC 1997: 4).

The program is delivered by a variety of agencies which compete for annual contracts. To be eligible under LINC a person must be an adult immigrant who is older than legal school leaving age and who has not acquired Canadian citizenship. Clients may participate in LINC for up to three years from the time they start training (LINC 1997). This program has been criticized that it only serves immigrants in their first three years (Burnaby et al. 2000).

In addition, all immigrants who want to enter the program have to be assessed at a special centre on the basis of national language benchmarks. Three areas of language ability such as listening/speaking, reading and writing have 8 levels of competency called benchmarks. However, the LINC instructions indicate that clients eligible for the program are those assessed at benchmark 1-4 (LINC 1997: 12-14). It means that the program does not meet the needs of immigrants with high levels of language competency who want to improve their language proficiency to get a high status job. Taking into account that the majority of highly educated immigrants, who came to Canada as an independent class, have an intermediate level of any official language proficiency, LINC is not very useful for them. Such immigrants, many of whom are professionals, do not have an appropriate language program to help them to advance their knowledge of English or French to compete with native-born Canadians in the labour market for the employment in their professional fields. However, even LINC programs suffer from inconsistent funding and poor work conditions (Burnaby et.al. 2000).

Furthermore, some bridge training programs have been introduced in Canada to integrate immigrants with foreign education into the labour market faster. For instance, in 2005, the

Internationally Educated Health Professionals Initiative was organized to increase the assessment and integration of internationally educated health professionals into the health workforce. One of the accomplishments of this Initiative are "bridge training and remediation programs aimed at quickly filling skills gaps for physiotherapists, nurses, medical laboratory technologists and medical radiation technologists" (FCRO 2008: 11).

In 2004, Citizenship and Immigration Canada also introduced the Enhanced Language Training (ELT) initiative which combines employment-specific language training in addition to work-related experiences (FCRO 2008). However, similar ESL for the workplace programs were created in some provinces before 2004. For instance, Duff, Wong, and Early (2002) conducted a qualitative study to examine a program combining ESL instruction and nursing skills for immigrants of Western Canada wishing to become long-term resident care aides. Their findings indicate that despite the fact that students improved English, nursing skills, and knowledge of how best to provide care to the elderly people, many of them reported different barriers in obtaining full-time employment as care aides including such factors as age, English proficiency, race and the priority of college graduates' programs.

2.10. Contributions of the Present Research

Empirical studies on the effect of education on immigrants' earnings indicate that Canadian society is still stratified in terms of ethnic and racial identity, nativity (native-born vs. foreign-born Canadians), and educational credentials (Canadian vs. foreign education).

According to the existent research, several general patterns of domination based on ethnic and racial identity and human capital can be identified in the Canadian labour market. The first one demonstrates the dominant position (in terms of income) of white native-born Canadians over visible minorities born in Canada when educational levels are controlled. The second pattern is related to the dominant position of educated native-born Canadians over immigrant groups in general, whose human capital is devaluated in the labour market. The third pattern shows that immigrants with Canadian education are mainly in privileged positions in comparison to immigrants having foreign education. The fourth one represents the dominant position of majority member immigrants with foreign credentials over visible minority

immigrants, whose human capital obtained abroad is more devaluated in the Canadian labour market.

Complementing to the body of literature on immigrants' credentials, this study attempts to assess whether immigrants' credentials obtained in different parts of the world make a difference in market returns. In addition, the study tries to understand the value of immigrants' credentials in different fields of study.

The main contribution of this research is, for the first time, to focus in details on the market worth of immigrants' foreign credentials attained in different world regions. The existing studies examine the effect of foreign credentials on immigrants' earnings, considering foreign credentials only as a whole group of credentials and comparing this group to Canadian credentials of immigrants or native-born Canadians.

Moreover, the value of immigrants' foreign credentials in different fields of study has not been examined.

In addition, there are few studies (Li 2008; Nakhaie 2007), in which there was an attempt to use the Ethnic Diversity Survey (2002) as the main source of data to study immigrants' economic performance in Canada. However, it is the only survey that contains direct measurements on where immigrants' credentials were obtained, besides the newly released 2006 Census.

2.11. Political Economy Theoretical Framework

The political economy framework to the study of racialization is considered to be appropriate to explain the relationship between education and income among Canadian immigrants. Its theoretical perspectives stress social structural factors in explaining social inequalities and emphasize differences in the distribution of property, power, and other resources in a society (Satzewich 1999).

The structure tradition of the political economy approach focuses on the macro level causes and consequences of the construction of racialized communities. The structure approach to the study of racialization on the example of the Canadian society has been advanced by Bolaria and Li (1988) in their work *Racial Oppression in Canada*. They show how ethnic and

racially defined collectives become slotted into certain positions in society. Bolaria and Li argue that the oppression of racial groups is rooted in the social and economic exploitation of racial minorities as well as their control by the dominant groups through various state regulations. As a result, race is seen as a social construct produced and maintained by differential power between dominant groups and subordinate groups. The process of racialization is also linked to capitalists search for cheap and relatively docile labour. In this context, immigrant labour is advantageous to capitalist production. The exploitation of immigrant workers is widely documented (Bolaria and Li 1988: 32-36).

In the case of Canada, the development of the capitalist economy has led to the dominance of English- and French-speaking communities and affected the formation of ethno-racial composition in the country (Russell 2009). In fact, between 1760 and the 1960s, much of the economic and political power in Canada was concentrated in the hands of English-speaking Canadian bourgeoisie, supported by the British colonial administration. Since the 1960s, French bourgeoisie in Quebec has accumulated economic, political, and ideological control in the province (Denis 1999). Other Canadian immigrant groups have been moved to subordinate positions in society not only due to economic development but also due to state regulations, including immigration policies. During its history, Canada has formulated immigration policies with the orientation on economic needs and on the control of social and cultural boundaries of the nation. It can be said that "immigration policies provide the gate-keeping function in designating the types of people who are deemed to be desirable immigrants as well as those who are considered unacceptable" (Li 2003: 36).

Prior to the 1970s, Canadian immigration policy was based on ethnic origin and cultural suitability as the major criteria for selecting immigrants. In the years since Confederation (1867) and until the end of the 19th century, immigration policies were created to maintain a "white Canada". The preferred status was given to the immigrants from Great Britain and the United States.

Then, during the period before the First World War, due to the economic growth and development of the western lands, Canada extended the acceptable groups of immigrants to other European countries and attracted a record number of people from Eastern Europe to immigrate to the less desirable prairie lands. A great number of Poles and Ukrainians came to Canada in this

period. At the same time, at the end of the 19th century, it was necessary to recruit the first "non-white" immigrants, the Chinese, to help in the construction of the Canadian Pacific Railway. About fifteen thousand Chinese workers were brought to Canada for this reason (Johnson 2006: 40). During the next period, which ran roughly from 1915 to 1945, Canada continued to accept settlers from different parts of Europe for agricultural development (Li 2003).

However, the end of the Second World War marked the beginning of essential changes in immigration policies. The industrial demand for labour in Canada, the shortage of skilled workers, and the decline of immigration from Europe are the major factors that were responsible for those changes in the policy. As a result, a new Immigration Act of 1967, which created the point system, was adopted. The major criteria for admission were: education and training; personal assessment; occupational demand; occupational skills; age; arranged employment; knowledge of French or English; relatives; and employment opportunities in the area of destination (Johnson 2006). Despite the acceptance of the point system, subtle discriminatory mechanisms such as the number and location of immigration offices located abroad were not eliminated (Johnson 2006: 52-53). In fact, the preference in selecting immigrants from the traditional source countries was maintained. In response to criticism, the Immigration Act of 1976 was adopted, according to which, "any person who seeks admission to Canada...is subject to standards of admission that do not discriminate on grounds of race, national or ethnic origin, colour, religion or sex" (Johnson 2006: 53). It should be mentioned that the point system only applies to the selection of independent immigrants. In the 1980s, Canada expanded a Business Immigrant Program as another way to attract investment capital and immigrants with business expertise and experience (Li 2003: 26-31).

Finally, in 2002, a new Immigration and Refugee Protection Act replaced the 1976 Immigration Act. Certain changes were made to encourage a broader range of applicants with skills and education needed to promote economic growth and development of Canada (Johnson 2006). However, it can be concluded that even though in recent decades some obvious changes in the immigration policy have occurred, the entrance status of various groups into Canadian society is still different.

Moreover, "the state uses various legitimizing policies to contain racism within manageable proportions" (Bolaria and Li 1988: 40). For example, Canadian multiculturalism

policy introduced in 1971 has been widely criticized because it has not changed the structural position of ethnic groups in society (Peter 1981; Bannerji 1996) and has preserved "the reality of the Canadian ethnic hierarchy of ethnic inequality" (Kallen 1982:56). To sum, Canadian economic development as well as the state's actions and policies have resulted in the creation of the hierarchy among immigrant groups. Visible minority immigrants are more disadvantaged and limited in their ability to gain access to important economic and political positions.

Subordinate members in society are subjected to many unequal treatments. Immigrants' human capital in terms of formal education also can be seen in the context of such unequal treatments. The existing research on the effect of immigrants' education on their earnings suggest that human capital cannot be viewed as a "thing" because not all immigrants' skills and educational credentials are assessed in the same way and can be directly converted into economic capital. Human capital is both embodied in persons and embedded within social structures. Therefore, this study also considers human capital as embodied in immigrants with different characteristics and types of cultural capital and, at the same time, as embedded within structural positions these immigrants hold in Canadian society.

The findings of the research on the effect of immigrants' credentials on their earnings also demonstrate that theories which emphasize individual factors of inequality cannot explain differences in earnings among distinct ethnic and racial groups of immigrants with similar educational attainments. For example, the human capital theory formulated within neoclassical economics by Gary Becker and Jacob Mincer views the capitalist economy as an open market where individuals freely compete for earnings based on their amount of human capital. The larger the amount they have, the more they can offer in the market and get rewarded a higher income because of their higher productivity. Becker (1975) investigates different kinds of investment such as learning new skills and formal education in human capital. In his study he tries to demonstrate that an investment approach to human resources is a powerful tool to explain a wide range of phenomena including earnings' distribution. Becker, similar to other theorists within economics, views people's knowledge and learning capacities to be comparable to other resources involved in the productive process. If such resources are exploited effectively, the results are profitable for individuals and society as a whole. However, such perspectives on

human capital ignore the significance of structured inequality. This factor can be recognized as a great limitation of economic theories in understanding the concept of human capital.

Within sociological theories, Bourdieu, for instance, criticizes the perspectives of the human capital theory, which emphasizes investments and profits that can be directly converted into money and does not take into account "the structure of the differential chances of profit" (1986: 243-244). In this context, Bourdieu conceptualizes cultural capital as of three main types: the embodied state in terms of the set of skills, practices, and knowledge embodied by an individual; the objectified state; and the institutionalized state in the form of educational qualifications and credentials (1986: 243-248).

Cultural explanations of inequality, addressed by cultural theories, also can be viewed inadequate. Strong arguments have been provided in the literature to criticize cultural theories. Li (1999), for example, criticizing cultural theoretical frameworks, claims that ethnic and racial inequality is related to structural conditions and economic opportunities available to ethnic and racial groups rather than to their cultures.

As a result, this study, in contrast to the human capital theory or cultural theoretical frameworks, takes into account structural constraints existing in society. It considers political economy theoretical perspectives as a more appropriate tool in explanations of inequality among immigrants with different educational credentials, which are analyzed in the context of unequal treatments in the Canadian society.

3. DATA AND METHODS

3.1. Data

The present study is based on data from the 2002 Ethnic Diversity Survey (EDS), which was a post-2001 Census survey. The main reason of using the EDS as the principal source of data for the analysis is that it is the only survey that has a number of direct measurements of the concepts regarding immigrants' educational credentials such as, for example, the world regions where immigrants obtained their education. This measurement is essential to answer the research question.

The Ethnic Diversity Survey was jointly supported by Statistics Canada and the Department of Canadian Heritage. It was administered by Statistics Canada using telephone interview between April and August 2002. Persons who completed the long questionnaire form of the 2001 Census survey were selected as respondents. The survey was based on a probabilistic sample which involved a multi-phased stratified sampling design. The target population consisted of persons 15 years of age and older who were living in private dwellings in the ten provinces in Canada, excluding residents on Indian reserves, persons who declared an Aboriginal origin in the 2001 Census, and those in territories and remote areas. The sample had 42,476 unweighted cases that represented 23,092,643 weighted persons (Statistics Canada 2002).

There are two kinds of files of the Ethnic Diversity Survey. The first one is the Public Use Microdata File, which was released to the general public, and can be used without any special restrictions. The second one is the Analytical File of the Ethnic Diversity Survey. It is available to researchers only at the Research Data Centres of Statistics Canada. In comparison to the Public Use File, the Analytical File has the bigger number of variables, and many concepts have higher levels of measurements. In addition, some data from the 2001 census were linked to the data of the Ethnic Diversity Survey. However, due to the issues of confidentiality, only results based on weighted data or data weighted by the sample weight can be released to researchers. This study uses the Analytical File of the Ethnic Diversity Survey that is available at

the Saskatchewan Research Data Centre at the University of Saskatchewan. Consequently, the results reported in the analysis are based on weighted data.

The study is focused on the immigrant population in Canada; therefore, only records on foreign-born Canadians were included in the analysis. Since the study attempts to assess the market worth of immigrants' educational credentials, only persons with the level of education higher than high school were included in the sample. Then, the study examines the effect of immigrants' credentials on their employment income. For this reason, respondents who did not have employment income or did not state it were not included in the analysis. A handful number of cases had negative or zero employment income. These cases were also excluded from the study. The analysis is also limited to respondents who were 25 to 64 years old to avoid the persons who were possibly attending schools and retired population. As a result, the sample used in the analysis has 1,765,200 weighted cases, 53 percent of which are men and 47 percent women.

3.2. Variables Used in the Analysis

The dependent variable for this study is employment income reported for 2000 in the 2001 census. "Earnings or employment income refers to total income received by persons 16 years of age or over during calendar year 2000 as wages and salaries, net income from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income" (Census 2001). Earnings from employment indicate immigrants' participation in the labour market.

The Ethnic Diversity Survey provides two measures of income. One measure is based on the Ethnic Diversity Survey single question about the total earnings in the past year. The other measure taken from the 2001 census is based on several questions about earnings in 2000 calendar year, and employment income can be separated from the total income. The analysis uses actual earnings from the 2001 census as the dependent variable. Even though the logarithm of earnings is often used to get a better regression fit and normalize the distribution, actual earnings are also used by the researchers for clear interpretation of results and as a good alternative for studying absolute economic outcomes (Li 2001; Li 2008).

The analysis essentially compares the earnings among seven groups of immigrants with educational credentials from different world regions to see the worth of these credentials in the Canadian labour market. These groups (see Table 3.1) made up of immigrants whose education was obtained in Canada, USA, Northern and Western Europe, Eastern and Southern Europe, Eastern and South-Eastern Asia, Southern Asia and other regions. These groups are coded as dummy variables using immigrants with Canadian education as a reference group. Separate regressions are produced for immigrant men and immigrant women.

The other independent variables used in the analysis measure human capital, individual, and work-related variations (see Table 3.1). In particular, the human capital variables include the level of education obtained (3 categories), fields of study (4 categories), whether the respondent speaks an official language as their first language (2 categories), and the years in Canada since immigration. The variables pertain to personal characteristics including visible minority status (2 categories), marital status (2 categories), and whether one lives or does not live in the top three Census Metropolitan Areas such as Toronto, Vancouver and Montreal (2 categories). The work-related variables include the number of weeks worked in 2000, and whether one worked full-time or part-time (2 categories).

The work-related variables and the variable "the years in Canada since immigration" are interval-ratio variables while other independent variables are coded as dummy variables in the analysis. Furthermore, the work-related variables are obtained from the 2001 census to be consistent to the dependent variable of employment income reported in the 2001 census. The variable "fields of study" is also from the Census data since the Ethnic Diversity Survey does not have similar variable. Other independent variables are obtained from the Ethnic Diversity Survey. The fact that the variables come from different sources influences, to some extent, the results and should be taken into account.

3.3. Statistical analysis

The study is based on statistical analysis using the SPSS (version 18.0). This study analyzes data using the techniques of descriptive and inferential statistics. Descriptive statistics (Healey 2009: 21-133) are used in the first step to examine frequency and percentage distributions of cases in the variables as well as measures of central tendency. In addition, the independent

variables are tested for their significant association with the dependent variable. Also differences in sample means are tested for significance (t-tests). Then, the correlation matrix of all variables is obtained.

Finally, the multiple regression technique (Healey 2009: 422-443) is used in the analysis. This technique allows us to assess the effects, separately and in combination, of the independent variables on the dependent variable. Multiple regression can be also used to make predictions of the dependent variable. The statistical procedure is essentially an ordinary least-squares solution which considers the dependent variable as a linear combination of a set of interval-ratio and categorical variables. For each interval-ratio variable in the equation, multiple regression calculates the unstandardized and standardized regression coefficients. For categorical variables with two categories multiple regression produces an unstandardized coefficient which expresses the difference between the means of the two categories.

The study consists of two main parts of statistical analysis. In the first part, the least-squares multiple regression is used to compare the differences in gross earnings among seven groups of immigrants with educational credentials attained in different world regions. Next, net differences are calculated for these groups, controlling for other human capital, individual, and work-related variations. In the second part of the statistical analysis, separate multiple regressions for four categories of fields of study are produced to see, first, the differences in gross earnings among seven immigrant groups in these fields of study, and, then, the differences in net earnings, controlling for the rest set of independent variables. In both parts of the analysis, separate regressions are estimated for immigrant men and immigrant women.

3.4. Ethical considerations

The study depends on the use of already existing data about people. Therefore, the main ethical principle which is involved in carrying out this research is the principle of privacy and confidentiality. The research applies the rules and regulations specified by Statistics Canada. The process of disclosure risk analysis is controlled by the analyst from the Research Data Centre at Saskatchewan University, where the study is conducted.

Table 3.1. Independent Variables Used in the Analysis

Independent Variables	Level of measurement	Number of categories	Source
Education from world regions	nominal	7	EDS
Canada		reference	
USA			
Northern & Western Europe			
Eastern & Southern Europe			
Eastern & South-Eastern Asia			
Southern Asia			
Other regions			
Level of education	nominal	3	EDS
lower than Bachelor degree		reference	
Bachelor degree			
Master or PhD			
Fields of study	nominal	4	Census
Education, arts, humanities & social sciences		reference	
Business administration & commerce			
Natural, applied sciences & engineering			
Medical fields			
Official language as the first language	nominal	2 (1=yes)	EDS
Years in Canada since immigration	interval-ratio		EDS
Visible minority status	nominal	2 (1=yes)	EDS
Marital status	nominal	2 (1=married)	EDS
Census Metropolitan Area	nominal	2 (1=top3 CMAs))	EDS
Weeks worked in 2000	interval-ratio		Census
Worked full-time or part-time	nominal	2 (1=full-time)	Census

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.

4. THE MARKET WORTH OF EDUCATIONAL CREDENTIALS AMONG IMMIGRANT MEN AND WOMEN

In order to assess the worth of immigrants' educational credentials attained in different world regions in the Canadian labour market, separate multiple regressions were estimated for immigrant men and women.

4.1. Findings for Immigrant Men

The results of multiple regressions (Model 1, 2, 3) for immigrant men are reported in Table 4.1. According to the results of the ANOVA test, all three overall models for men were found to be significantly different from the null model.

The data on gross earnings among men (Table 4.1., Model 1) indicate that immigrant men had significantly different earnings depending on the world region where their educational credentials were obtained. Immigrants with education from the USA and Northern and Western Europe earned over $9,500 a year more than immigrants with Canadian education. It means that some types of immigrants' foreign credentials could be beneficial in the labour market, in comparison to Canadian credentials of immigrants.

However, immigrants' education from other world regions was valued in the Canadian labour market substantially less than education attained in Canada. Immigrants with credentials from Eastern, and South-Eastern Asia earned $19,081 less than immigrants who obtained education in Canada, followed by immigrants with Southern Asian education and credentials from Other regions who earned respectively about $13,500 and $12,000 less than immigrants with Canadian credentials.

It is important to mention that immigrant men with education from Eastern and Southern Europe also earned $7,652 significantly less than immigrants with Canadian education.

Consequently, educational credentials from Eastern and Southern Europe did not have similar value as education obtained by immigrants in other parts of Europe or in the United States.

Despite the fact that the multiple coefficient of determination (R square adjusted) indicates that only about 4 percent of the variance in immigrants' employment income was explained by educational credentials, there were substantial gross earnings differences among immigrant men with different educational credentials.

The results indicate that after adjusting variables for human capital, individual and work-related variations (Model 2), earning disparities among immigrant men with different educational credentials still existed even though they had been reduced. It suggests that independent variables included in the model had substantial effect on immigrants' employment income along with the types of educational credentials analysed in Model 1. The multiple coefficient of determination in Model 2 showed that about 22 percent of the variance in immigrants' employment income was explained by all independent variables.

Immigrants who held educational credentials obtained in Northern and Western Europe and in the United States of America still had higher employment income than immigrants with Canadian credentials. Immigrant men with Northern and Western European education earned $5,418 a year more and immigrants with the US education earned $4,901 more than immigrants who studied in Canada. However, credentials from other world regions still had earnings disadvantage, compared to Canadian credentials of immigrants. For example, immigrants with education from Eastern and South-Eastern Asia and from Southern Asian earned about $7,000 less than immigrants with education obtained in Canada. Then, having educational credentials from Eastern and Southern Europe also led to earnings penalties in the Canadian labour market similar to credentials obtained in Asian regions. Immigrants with this type of educational credentials earned about $6,000 less than their counterparts with Canadian education.

Human capital variables had a positive effect on earnings. To be expected, immigrant men with a higher level of education tended to have a substantially higher annual employment income. Those who had Bachelor degree and those with Master or PhD degrees earned $11,852 and $24,899 respectively more than immigrants who obtained education lower than Bachelor degree. Next, immigrant men who spoke English or French as their first language had significantly larger earnings advantage of $3,597 than those who learned any of the Canadian

official languages as a second language. Each year of living in Canada since immigration increased immigrants' employment earnings by about $400 a year.

Then, visible minority immigrant men did not have the same chances in the Canadian labour market as majority member immigrants. They earned $5,349 less, compared to the earnings of their majority member counterparts. Furthermore, living in three largest census metropolitan areas such as Toronto, Vancouver, and Montreal brought immigrant men an earnings advantage over those residing in smaller or nonmetropolitan areas. Those from the largest Canadian cities earned about $1,000 significantly more than immigrants who lived in less populated cities and rural areas. Marital status variable had a positive impact on the economic performance of immigrant men. The average employment income of married men was significantly higher than the average income of not married men by $12,593.

Similar to human capital variables, work-related variations had a positive effect on immigrants' earnings. The data show that immigrant men who worked full-time and more weeks in a year earned substantially more than those who worked part-time and less weeks respectively. Individuals who worked full-time earned $23,952 a year more than part-time workers. For every additional week worked in a year, the average employment income increased by about $900, controlling for the effects of all other independent variables.

In Model 3, in addition to other human capital, individual, and work-related variables, the dummy variables that represent fields of study in which immigrants obtained their educational credentials were included to see the effect of different fields of study on immigrants' earnings. The multiple coefficient of determination in the regression indicates that about 24 percent of the variance in annual employment income was explained by all ten independent variables included in the model. Comparing to the results in Model 2, "fields of study" variable explained about 2 percent of the variance in immigrants' earnings in Model 3.

The results demonstrate that there were still substantial net earnings differences among immigrant men with educational credentials attained in different world regions. Immigrants with education from the USA and Northern and Western Europe continued to have higher earnings than immigrants with Canadian credentials. Those who held the US education earned $4,363 more than immigrants studied in Canada, and immigrants with Northern and Western European education earned $2,588 more than those ones. Moreover, the data show that the difference

between the average employment income earned by immigrants with education from the United States and those with Northern and Western European credentials increased and almost doubled. Immigrant men with credentials attained in the US had the greatest net advantage in earnings in comparison to earnings of immigrants with other educational credentials.

Then, immigrants who had educational credentials from Eastern and Southern Europe, Asian regions, and Other regions continued to earn significantly less than the holders of Canadian credentials, varying from about $900 less for immigrants with education from Other regions to over $6,000 less for those with Southern Asian educational credentials. The market worth of the immigrants' credentials obtained in Eastern and Southern Europe was similar, to some extent, to the value of credentials from Asian regions.

The assumption about the effect of the major field of study on immigrants' earnings was supported by the obtained results. Immigrant men in health fields had the largest net earnings advantage while those in education, arts, humanities, and social sciences had the biggest net disadvantage. Immigrants who attained education in health fields earned $25,424 more, in natural, applied sciences and engineering earned $11,468 more, and in commerce, management and business administration earned $9,600 more than their counterparts studied in the fields of education, arts, humanities and social sciences.

Similar to Model 2, other human capital variables had a positive impact on the dependent variable. To be expected, immigrant men with a higher level of education had a substantially higher annual employment income. Those who had Bachelor degree and those with Master or PhD degrees earned about $12,000 and about $25,000 respectively more than immigrants who obtained education lower than Bachelor degree. Next, immigrant men who spoke any of the Canadian official languages as their first language had significantly larger earnings advantage of $3,871 than those who learned English or French as their second language. Each year of living in Canada since immigration increased immigrants' employment income by $450 a year.

Then, visible minority immigrant men, like in Model 2, had substantially lower employment income than their majority member counterparts. They earned about $7,000 less, compared to the earnings of majority member immigrants. Furthermore, living in Toronto, Vancouver, and Montreal brought immigrant men an earnings advantage over those residing in smaller or nonmetropolitan areas. Those from the largest Canadian cities earned about $500

significantly more than immigrants from other cities and rural areas. Marital status variable had a positive impact on the earnings of immigrant men. The average employment income of married men was significantly higher than the average income of not married men by $12,270

Work-related variables continued to have a positive effect on immigrants' earnings. The results demonstrate that immigrant men who worked full-time and more weeks in a year earned substantially more than those who worked part-time and less weeks respectively. Individuals who worked full-time earned $26,680 a year more than part-time workers. Each additional week worked in a year increased annual employment earnings by about $900, controlling for the effects of all other independent variables.

4.2. Findings for Immigrant Women

The results of multiple regressions (Model 1, 2, 3) for immigrant women are reported in Table 4.2. According to the results of the ANOVA test, all three overall models for women, like for men, were found to be significantly different from the null model.

The results on gross earnings among immigrant women (Table 4.2., Model 1) are similar, to some extent, to the pattern of differences in gross earnings for immigrant men. The data indicate that immigrant women also had significantly different earnings depending on the world region where their educational credentials were obtained, but the disparities were not as large as those found among men, except the difference in earnings for women with the US education. Similar to the gross earnings of men, education from the United States and Northern and Western Europe brought women advantage in earnings, compared to those of immigrants with Canadian credentials. Moreover, women with the US education had the highest gross employment earnings that were even substantially greater than the earnings of immigrants with Northern and Western European education. Women with the US and Northern and Western European educational credentials earned $18,844 and $1,485 respectively more than their counterparts who obtained education in Canada.

Differences in gross earnings also demonstrate that immigrants' educational credentials from other world regions, including Eastern and Southern Europe, were valued less in the Canadian labour market than Canadian credentials of immigrants, varying from $4,208 less for immigrant women with education from Eastern and Southern Europe to $9,127 less for those

with credentials from Eastern and South-Eastern Asia. Thus, there were substantial gross earnings differences among immigrant women with different educational credentials, as among immigrant men. About 4 percent of the variance in annual earnings was explained by educational credentials according to the multiple coefficient of determination in the regression (Model 1).

After controlling for human capital, individual, and work-related variations, the disparities in immigrant women' employment income still existed even though they were slightly reduced (Model 2, Table 4.2). The multiple coefficient of determination in this model indicates that about 25 percent of variance in annual earnings was explained by all included independent variables.

Immigrant women with education attained in the United States continued to have the highest employment income, compared to other immigrant groups. Their average earnings were $16,630 significantly more than the earnings of their counterparts with Canadian credentials. In contrast to immigrant men, education from all parts of Europe brought immigrant women significant earnings advantage. Immigrants with Northern and Western European credentials and with Eastern and Southern European credentials earned about $2,000 and $1,000 respectively more than those with education obtained in Canada. However, education from Asian and Other regions continued to worth substantially less than the Canadian credentials of immigrant women. For example, immigrants with Eastern and South-Eastern Asian credentials earned $4,455 less and those with Southern Asian education earned $7,262 less than immigrants who studied in Canada.

Furthermore, similar to immigrant men, human capital raised the net earnings for immigrant women. To be expected, immigrant women with a higher level of education had substantially higher annual employment income. Those who had Bachelor degree and those with Master or PhD degrees earned about $6,000 and $20,000 respectively more than immigrants who obtained education lower than Bachelor degree. Next, immigrant women whose first language was English or French had significantly larger earnings advantage of $4,517 than those who learned any of the Canadian official languages as a second language. Each year of living in Canada since immigration increased immigrants' employment earnings by about $300 a year.

Then, contrary to immigrant men, visible minority immigrant women did not have earnings disadvantage in the Canadian labour market compared to majority member immigrant

women. They earned about $800 more than their majority member counterparts. Then, living in three largest census metropolitan areas such as Toronto, Vancouver, and Montreal brought immigrant women earnings benefits over those residing in smaller or nonmetropolitan areas. Those from the largest Canadian cities earned about $5,500 significantly more than immigrants who lived in less populated cities and rural areas. Like for immigrant men, marital status variable had a positive impact on the economic performance of immigrant women. The average employment income of married women was significantly higher than the average income of not married women by $4,375.

Similar to human capital variables, work-related variations had a positive effect on immigrants' earnings. The data show that immigrant women who worked full-time and more weeks in a year earned substantially more than those who worked part-time and less weeks respectively. Full-time workers earned about $16,000 a year more than part-time workers. Each additional week worked in a year brought an annual increase of about $500, controlling for the effects of all other independent variables.

When the major field of study as an independent variable was included in the equation (Model 3, Table 4.2), there were still substantial net earnings differences among immigrant women with educational credentials attained in different world regions. The pattern on the earnings disparities among immigrants with different credentials remained unchanged. Immigrant women with educational credentials from the United States had significantly far greater earnings than other immigrant groups. Immigrants with the US education earned $23,449 more than their counterparts who obtained education in Canada. Immigrant women who held education from Europe also continued to have significant earnings advantage over immigrants with \Canadian education, varying from $3,404 more for women with Northern and Western European credentials to about $1,000 more for immigrants with Eastern and Southern European credentials. . However, education from Asian and Other regions continued to worth substantially less than the Canadian credentials of immigrant women. For example, immigrants who attained education in Eastern and South-Eastern Asia earned $4,659 less and those with Southern Asian education earned $5,363 less than immigrants who had Canadian educational credentials.

Similar to immigrant men, immigrant women in health fields had the largest net earnings advantage. Those in education, arts, humanities, and social sciences had the biggest net

disadvantage which was, however, less compared to other fields of study than for immigrant men. Immigrants who attained education in health fields earned $8,741 more, in natural, applied sciences and engineering earned $5,130 more, and in commerce, management and business administration earned $1,678 more than their counterparts studied in the fields of education, arts, humanities and social sciences.

Like in Model 2, other human capital variables had a positive impact on the dependent variable. To be expected, immigrant women with a higher level of education had a substantially higher annual employment income. Those who had Bachelor degree and those with Master or PhD degrees earned about $5,000 and $18,600 respectively more than immigrants who obtained education lower than Bachelor degree. Then, immigrant women who spoke any of the Canadian official languages as their first language netted additional $4,418 a year than those who learned English or French as their second language. Each year of living in Canada since immigration brought an annual increase of about $400.

Next, visible minority immigrant women, as opposed to visible minority immigrant men earned about $1,000 more compared to the earnings of majority member immigrants. Furthermore, those from the largest Canadian cities earned about $6,600 significantly more than immigrants from other cities and nonmetropolitan areas. Marital status variable had a positive effect on the earnings of immigrant women. The average employment income of married women was significantly higher than the average income of not married women by about $5,000

Work-related variables also continued to have a positive impact on immigrants' earnings. The results demonstrate that immigrant women who worked full-time and more weeks in a year earned substantially more than those who worked part-time and less weeks respectively. Individuals who worked full-time earned $16,265 a year more than part-time workers. Each additional week worked in a year increased annual employment earnings by about $500, controlling for the effects of all other independent variables.

The multiple coefficient of determination in the regression for immigrant women in Model 3 indicates that 25.7 percent of the variance in annual employment income was explained by all ten independent variables included in the model. A very slight difference in the multiple coefficient of determination (R square adjusted = 0.235) was found in the regression estimated for immigrant men in Model 3. These results of the overall models conform to the existent

literature on the effect of education on immigrants' earnings. For example, Li's study (2008), which was also based on the data from the Ethnic Diversity Survey, demonstrates that R square was 0.205 for immigrant men, and R square was 0.225 for women in Model 2, which contained variables on human capital, personal and work-related variations (Li 2008:300, 303). Li's model did not have the major field of study as an independent variable, but it included years of foreign work experience. The latter was not included in the regression in this study since due to the common results of the existing research, immigrants' foreign work experience is extremely devaluated in the Canadian labour market (Reitz 2001a; Aydemir and Skuterud 2005). Li's analysis (2008) also confirms that foreign work experience is largely not recognized in Canada. His findings show that immigrants' foreign work experience "did not result in an improvement in earnings" while each year of experience in Canada brought an earnings advantage of about $500 for men and $400 for women (Li 2008:301, 304).

4.3. Conclusions

Complementing to the existing research on the effect of education on immigrants' earnings, this study uses a direct measurement from the Ethnic Diversity Survey regarding immigrants' highest educational credentials and where they were obtained. The results obtained through separate estimations for immigrant men and women indicate that there were significant gross and net earnings differences among immigrant men and women with educational credentials attained in different world regions. Moreover, when foreign credentials were compared to Canadian credentials of immigrants, foreign credentials from Asian and Other regions of immigrant men were more devaluated than those of immigrant women according to the results of both gross and net employment earnings.

On the other hand, the analysis demonstrates that some types of foreign credentials of immigrant men and women could bring them an earnings advantage in the labour market in comparison to the Canadian education of immigrants. Immigrant men with educational credentials from the US and Northern and Western Europe and women with credentials from the USA and all parts of Europe had greater earnings than their counterparts with Canadian credentials. These results support in general the conclusions addressed by Li (2008) that foreign credentials do not necessary bring a negative impact on immigrants' earnings. He argues that

"foreign credentials held by immigrant men and women of majority member background enjoy an earnings premium compared to their counterparts who have Canadian credentials. Only immigrant men and women of visible minority background suffer an earnings penalty" (Li 2008: 306). This analysis with direct focus on the worth of immigrants' credentials from different world regions indicates that not all majority member immigrant men with foreign education had an earnings advantage compared to those with Canadian education, if foreign credentials attained in different world regions could be roughly associated with their holders as majority and minority member immigrants. . Immigrant men with credentials from Eastern and Southern Europe were disadvantaged in the labour market similar to immigrants with education obtained in Asia and Other regions. Immigrant women with Eastern and Southern European credentials, unlike immigrant men, had higher employment income than those with Canadian education. Consequently, it can be generally concluded that minority member immigrant women suffered an earnings penalty while their majority member counterparts benefited from having foreign credentials.

Human capital variations produced a positive effect on earnings for immigrant men and women. This study supports the assumption that immigrant men and women with a higher level of education tend to have a higher annual employment income. The findings point to the importance that despite the various structural and personal barriers that immigrants face in the Canadian labour market, among the same groups of immigrants, individuals with a higher level of education often have better economic performance. The results of this research, regarding the significance of immigrants' educational degrees, are consistent with previous studies on the impact of educational credentials on immigrants' earnings (Li 2001, 2008; Reitz 2001a; Ferrer and Riddell 2008). Speaking English or French as a first language and years in Canada since immigration also had a positive impact on immigrants' earnings. For both immigrant men and women, immigrants holding education in health fields had the largest net earnings advantage. Those in education, arts, humanities, and social sciences had the biggest net disadvantage which was, however, less, compared to other fields of study for immigrant women. Years in Canada since immigration produced a positive effect on earnings for both immigrant men and women.

Visible minority immigrant men were more disadvantaged in the Canadian labour market in comparison to majority member immigrant men while being a visible minority woman did not

lead to earnings penalties compared to their majority member counterparts. Immigrants living in three largest metropolitan centres such as Toronto, Vancouver and Montreal enjoyed an earnings premium, especially immigrant women, compared to immigrant men and women residing in smaller cities and nonmetropolitan areas. The average employment income of married immigrant men and women was higher than income of not married immigrants. It can be, probably, explained by the fact that married immigrants feel themselves more responsible to provide better quality of life and support for their families, especially families with children, in a new country.

To be expected, work-related variations had a positive effect on earnings of immigrant men and women. The data show that immigrants who worked full-time and more weeks in a year earned substantially more than those who worked part-time and less weeks respectively.

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Table 4.1. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Men**

Independent variables	Number	Model 1	2	3
Education from world regions	929,170			
Canada (ref.)	465,130			
USA	41,280	9,564*	4,901*	4,363*
Northern & Western Europe	81,320	9,825*	5,418*	2,588*
Eastern & Southern Europe	84,470	-7,652*	-5,886*	-5,869*
Eastern & South-Eastern Asia	99,640	-19,081*	-7,193*	-5,096*
Southern Asia	64,780	-13,525*	-6,883*	-6,634*
Other regions	92,550	-11,982*	-1,856*	-901*
Level of education				
lower than Bachelor degree (ref.)				
Bachelor degree			11,852*	12,125*
Master or PhD			24,899*	24,939*
Fields of study				
Educ., arts, humanities & soc. sciences (ref.)				
Commerce, management & business administration				9,600*
Natural, applied sciences & engineering				11,468*
Health fields				25,424*
Official language as the first language			3,597*	3,871*
Years in Canada since immigration			398*	450*
Visible minority status			-5,349*	-6,925*
Marital status			12,593*	12,270*
Census Metropolitan Area			1,062*	502*
Weeks worked in 2000			906*	904*
Worked full-time or part-time			23,952*	26,680*
F-test		5908*	16906*	13381*
R Square adjusted		0.037	0.216	0.235
Intercept		51,090*	-40,175*	-52,042*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

Table 4.2. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Women**

Independent variables	Number	Model 1	Model 2	Model 3
Education from world regions	836,030			
Canada (ref.)	410,420			
USA	34,420	18,844*	16,630*	23,449*
Northern & Western Europe	68,980	1,485*	2,372*	3,404*
Eastern & Southern Europe	68,740	-4,208*	1,100*	955*
Eastern & South-Eastern Asia	130,270	-9,127*	-4,455*	-4,659*
Southern Asia	48,570	-6,078*	-7,262*	-5,363*
Other regions	74,630	-5,444*	-484*	-309*
Level of education				
lower than Bachelor degree (ref.)				
Bachelor degree			5,787*	5,076*
Master or PhD			19,720*	18,617*
Fields of study				
Educ., arts, humanities & soc. sciences (ref.)				
Commerce, management & business administration				1,678*
Natural, applied sciences & engineering				5,130*
Healthl fields				8,741*
Official language as the first language			4,517*	4,418*
Years in Canada since immigration			322*	378*
Visible minority status			809*	1,041*
Marital status			4,375*	4,982*
Census Metropolitan Area			5,504*	6,620*
Weeks worked in 2000			537*	536*
Worked full-time or part-time			16,262*	16,265*
F-test		5069*	18029*	13219*
R Square adjusted		0.035	0.247*	0.257
Intercept		33,690*	-19,035*	-22,096*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

5. THE MARKET WORTH OF EDUCATIONAL CREDENTIALS AMONG IMMIGRANT MEN AND WOMEN IN DIFFERENT FIELDS OF STUDY

One of the objectives of the study is to assess the value of immigrants' educational credentials in different fields of study. Taking into account the classification of the major field of study addressed by Statistics Canada and the available frequencies of respondents in different fields of study in the sample, the earnings of immigrant men and women are compared among four groups such as: 1) immigrants who obtained education in the field of education, arts, humanities, and social sciences; 2) in commerce, management, and business administration; 3) in the fields of natural, applied sciences and engineering; and 4) in health fields. The frequency and percentage of immigrant men and women with credentials attained in these four fields of study are given in Table 5.1.

The data indicate that the majority of immigrant men (56 percent) in the studied sample had education in natural, applied sciences and engineering whereas only 5 percent of them held educational credentials in health fields. About 20 percent of men got credentials in education, arts, humanities and social sciences as well as in commerce, management and business administration. Contrary to immigrant men, the majority of immigrant women (36 percent) had credentials in education, arts, humanities and social sciences, followed by women with education in commerce, management and business administration and in natural, applied sciences and engineering, represented by 28 and 19 percent respectively. Similar to immigrant men, the least number of immigrant women held education in health fields, but their percentage (17 percent) was tripled compared to men in these fields of study. Then, separate multiple regressions were estimated for four groups of fields of study for immigrant men and immigrant women.

5.1. Findings for Immigrant Men and Women with Credentials in Education, Arts, Humanities and Social Sciences

The results on gross and net earnings for immigrant men with educational credentials in education, arts, humanities and social sciences are reported in Table 5.2. The analysis demonstrates that among immigrant men in these fields of study, there were substantial gross earnings differences among immigrants with educational credentials attained in different world regions (Model 1, Table 5.2). Immigrants who had education from the USA and Eastern and Southern Europe earned significantly more, $3,765 and $4,060 respectively, than immigrants with Canadian credentials. However, immigrant men with other types of credentials suffered from earnings penalty compared to their counterparts who obtained education in Canada. For example, the average gross employment income of immigrants with educational credentials from Eastern and South-Eastern Asia was about $21,000 significantly less and from Southern Asia was $13,479 less than the average gross earnings of immigrant men who held credentials from Canada.

After adjusting for human capital, individual and work-related variations, the disparities in earnings of immigrant men with different educational credentials obtained in the fields of education, arts, humanities and social sciences reduced due to variations in the independent variables now being controlled (Model 2, Table 5.2). Credentials from the USA and Eastern and Sothern Europe continued to bring earnings advantage. Immigrants with education attained in the United States earned about $3,000 more, and immigrants with Eastern and Southern European credentials earned $10,610 more than immigrant men who studied in Canada in these fields of study. Immigrants with education from Eastern and South-Eastern Asia also earned $4,426 significantly more than their counterparts with Canadian credentials. However, Canadian credentials were valued higher than other types of immigrants' foreign credentials. For instance, immigrants who held Southern Asian credentials and Northern and Western European credentials earned $ 4,760 and $2,639 respectively less than immigrant men who had Canadian credentials. The difference in net earnings between immigrants with education from Other regions and their counterparts with Canadian education was found to be not statistically significant.

For immigrant men with educational credentials obtained in the fields of education, arts, humanities and social sciences, human capital variables had a positive effect on earnings. To be expected, immigrant men with a higher level of education tended to have a substantially higher annual employment income. Those who had Bachelor degree and those with Master or PhD degrees netted additionally $6,393 and $15,527 a year respectively compared to immigrants who obtained education lower than Bachelor degree. Next, immigrant men who spoke English or French as their first language had significantly larger earnings advantage of $8,054 than those who learned any of the Canadian official languages as a second language. Each year of living in Canada since immigration increased immigrants' employment earnings by about $500 a year.

Then, visible minority immigrant men suffered a net loss of $10,137 a year compared to the earnings of their majority member counterparts. Living in three largest census metropolitan areas such as Toronto, Vancouver, and Montreal brought immigrant men a substantial earnings advantage of $8,153 a year over those residing in smaller or nonmetropolitan areas. Marital status variable had a positive impact on the economic performance of immigrant men who had credentials in education, arts, humanities and social sciences. The average employment income of married men was significantly higher than the average income of not married men by $12,608.

Similar to human capital variables, work-related variations had a positive effect on immigrants' earnings in these fields of study. The data indicate that immigrant men who worked full-time and more weeks in a year earned substantially more than those who worked part-time and less weeks respectively. Individuals who worked full-time earned $20,064 a year more than part-time workers. For every additional week worked in a year, the average employment income increased by about $800, controlling for the effects of all other independent variables.

The results on gross and net earnings for immigrant women with educational credentials in education, arts, humanities and social sciences are reported in Table 5.3. The data indicate that immigrant women in these fields of study, similar to immigrant men, had significantly different gross earnings depending on the world region where their educational credentials were obtained (Model 1, Table 5.3). Education from the United States brought to immigrant women a huge increase of $43,788 in gross earnings compared to immigrants with Canadian education. Immigrant women with Northern and Western European credentials also had a statistically significant earnings advantage of $2,321 a year over their counterparts with credentials obtained

in Canada. Immigrant women with other types of foreign credentials earned substantially less than those who studied in Canada, varying from about $16,000 less for immigrants with education from Eastern and South-Eastern Asia to about $2,000 less for women with credentials attained in Eastern and Southern Europe.

After controlling for human capital, individual, and work-related variations, the disparities in immigrant women' employment income still existed even though they slightly reduced (Model 2, Table 5.3). Immigrant women with education attained in the United States in the fields of education, arts, humanities and social sciences continued to have the highest employment income, compared to other immigrant groups. Their average earnings were $35,529 significantly more than the earnings of their counterparts with Canadian credentials. Education from all parts of Europe also brought immigrant women significant earnings advantage in these fields of study. Immigrants with Northern and Western European credentials and with Eastern and Southern European credentials earned about $3,500 and $8,500 respectively more than those with education obtained in Canada. However, education from Asian and Other regions continued to worth substantially less than the Canadian credentials of immigrant women. For example, immigrants with Eastern and South-Eastern Asian credentials earned $9,101 less and those with Southern Asian education earned $10,058 less than immigrants who studied in Canada.

Furthermore, similar to immigrant men with credentials in education, arts, humanities and social sciences, human capital raised the net earnings for immigrant women. To be expected, immigrant women with a higher level of education had substantially higher annual employment income. Those who had Bachelor degree and those with Master or PhD degrees earned about $2,000 and $15,000 respectively more than immigrants who obtained education lower than Bachelor degree. Immigrant women whose first language was English or French netted an additional $6,951 a year compared to those who learned any of the Canadian official languages as a second language. Each year of living in Canada since immigration increased immigrants' employment earnings by about $240 a year.

Then, contrary to immigrant men in these fields of study, visible minority immigrant women did not suffer from earnings disadvantage compared to majority member immigrant women. They earned about $4,000 more than their majority member counterparts. Then, living in three largest census metropolitan areas such as Toronto, Vancouver, and Montreal brought

immigrant women significant earnings benefits of $6,850 a year over those residing in smaller or nonmetropolitan areas. Like for immigrant men, marital status variable had a positive impact on the economic performance of immigrant women. The average employment income of married women was significantly higher than the average income of not married women by $6,676.

Similar to human capital variables, work-related variations had a positive effect on immigrants' earnings. The data show that full-time workers earned about $16,000 a year more than part-time workers. Each additional week worked in a year brought an annual increase of about $600, controlling for the effects of all other independent variables.

5.2. Findings for Immigrant Men and Women with Credentials in Commerce, Management and Business administration

The results on gross and net earnings for immigrant men with educational credentials in commerce, management and business administration are reported in Table 5.4. Gross earnings differences indicate that immigrant men with educational credentials from the USA and Northern and Western Europe earned substantially more, $3,308 and $16,564 respectively, than the holders of Canadian credentials (Model 1, Table 5.4). However, immigrant men with credentials obtained in other world regions had a huge significant earnings disadvantage compared to those who held Canadian education in these fields of study. They suffered a gross loss, varying from a loss of $22,824 a year for immigrants with education from Other regions to a loss of $16,602 for immigrants with credentials attained in Eastern and South-Eastern Asia.

After controlling for human capital, individual and work-related differences (Model 2, Table 5.4), earnings disparities among immigrant men with educational credentials attained in different world regions substantially reduced due to variations in the variables now being controlled. Only educational credentials from Northern and Western Europe still brought immigrant men earnings advantage of $ 14,090 a year compared to their counterparts with Canadian credentials obtained in the fields of commerce, management and business administration. Educational credentials from other world regions were valued significantly less in the labour market than Canadian credentials in these fields of study. For example, immigrant men who held education from Eastern and Southern Europe earned $12,082 significantly less and those who had credentials obtained in Southern Asia earned about $8,000 less than

immigrant men who studied in the fields of commerce, management and business administration in Canada. The difference in net earnings between immigrants with education from the USA and their counterparts with Canadian education was found to be not statistically significant.

To be expected, human capital had a substantial positive effect on the earnings of immigrant men in these fields of study. Those who achieved Bachelor degree and Master or PhD degree earned $7,330 and $29,528 respectively more than those who did not accomplish a university degree. Speaking any of the Canadian official languages as a first language brought immigrant men a great annual increase of $16,059. Each additional year spent in Canada since immigration increased earnings by about $400 a year.

Similar to immigrant men with credentials in the fields of education, arts, humanities and social sciences, visible minority immigrant men with credentials in commerce, management and business administration did not have equal chances in the labour market compared to their counterparts of majority background. They earned $4,750 less than majority member immigrant men. Immigrants who lived in the top three census metropolitan areas had a substantial earnings advantage of $5,178 a year over those residing in other regions. The average employment income of married men was significantly higher than the average income of not married men by $15,448.

Like human capital variables, work-related variations had a positive impact on immigrants' earnings in these fields of study. The data show that immigrant men who worked full-time and more weeks in a year earned substantially more than those who worked part-time and less weeks respectively. Individuals who worked full-time earned about $24,000 a year more than part-time workers. For every additional week worked in a year, the average employment income increased by $850, controlling for the effects of all other independent variables.

The results on gross and net earnings for immigrant women with educational credentials obtained in commerce, management and business administration are reported in Table 5.5. The data indicate that immigrant women in these fields of study, similar to immigrant men, had significantly different gross earnings depending on the world region where their educational credentials were obtained (Model 1, Table 5.5). Like immigrant men, immigrant women who held educational credentials obtained in Northern and Western Europe and in the United States of America had higher gross employment income than immigrants with Canadian credentials in

these fields of study. Immigrant women with Northern and Western European education earned $900 a year more and immigrants with the US education earned $3,450 more than immigrants who studied in Canada. Immigrant women with other types of foreign credentials earned substantially less than their counterparts with Canadian education, varying from $11,560 less for immigrant with credentials from Eastern and South-Eastern Asia to $3,810 less for those with education obtained in Southern Asia.

After adjusting for human capital, individual and work-related variations (Model 2, Table 5.5), only educational credentials from the USA brought immigrant women a net advantage of $4,852 compared to the women with Canadian credentials while for immigrant men only credentials from Northern and Western Europe were in advantage in similar fields of study. Immigrant women with foreign credentials obtained in other than the USA world regions netted significantly less than their counterparts who studied in Canada and got education in commerce, management and business administration, varying from $7,032 less for immigrant women with education from Eastern and South-Eastern Asia to $705 less for immigrants with Northern and Western European credentials.

Furthermore, similar to immigrant men with credentials in commerce, management and business administration, human capital raised the net earnings for immigrant women. To be expected, those who had Bachelor degree and those with Master or PhD degrees earned about $5,000 and $21,000 respectively more than immigrants who obtained education lower than university degree. Next, immigrant women whose first language was English or French had significantly larger earnings advantage of $2,910 than those who learned any of the Canadian official languages as a second language, but this advantage was about five times less than immigrant men had in similar fields of study. . Each year of living in Canada since immigration increased an employment income of immigrant women by about $250 a year.

Visible minority immigrant women, similar to visible minority immigrant men with education attained in commerce, management and business administration and contrary to immigrant women with credentials in education, arts, humanities and social sciences, had earnings disadvantage in the Canadian labour market compared to majority member immigrant women. They earned about $5,600 less than their majority member counterparts. Then, living in three largest census metropolitan areas such as Toronto, Vancouver, and Montreal brought

immigrant women earnings benefits of $5,794 a year over those residing in smaller or nonmetropolitan areas. Marital status variable had a positive impact on the economic performance of immigrant women, but less than for men in the same fields of study. The average employment income of married women was significantly higher than the average income of not married women by $2,844.

Similar to human capital variables, work-related variations had a positive effect on immigrants' earnings. Immigrant women who worked full-time and more weeks in a year earned substantially more than those who worked part-time and less weeks respectively. Full-time workers earned about $13,000 a year more than part-time workers. Each additional week worked in a year brought an annual increase of about $400, controlling for the effects of all other independent variables.

5.3. Findings for Immigrant Men and Women with Credentials in Natural, Applied Sciences and Engineering

The results on gross and net earnings for immigrant men who obtained educational credentials in natural, applied sciences and engineering are reported in Table 5.6. Among immigrant men with education in these fields of study, there were substantial gross earnings differences among immigrants with educational credentials attained in different world regions (Model 1, Table 5.6). The data indicate that, like for immigrant men with credentials in commerce, management and business administration, credentials from the USA and Northern and Western Europe brought increase in gross earnings of $12,685 and $6,737 respectively in comparison to the earnings of immigrants with Canadian credentials. However, immigrants who held other types of foreign credentials earned significantly less than their counterparts who obtained education in Canada, varying from over $14,500 less for immigrants with credentials from Eastern and South-Eastern Asia to over $5,000 less for immigrants with education attained in Eastern and Southern Europe.

After controlling for human capital, individual and work-related differences, the earnings disparities reduced due to variations in the independent variables now being controlled (Model 2, Table 5.6). Immigrant men with the USA credentials continued to have the highest employment income in comparison to other immigrant groups. They earned over $9,000 more than those with

Canadian education in the fields of natural, applied sciences and engineering. Immigrant men with credentials attained in Northern and Western Europe and Other regions also earned $1,567 and $4,100 respectively more than their counterparts who studied in Canada. Immigrant men with credentials from Eastern and Southern Europe as well as from Asian regions suffered a net loss compared to immigrants who held Canadian credentials. For example, education from Eastern and Southern Europe and from Eastern and South-Eastern Asia brought net penalty in earnings of $6,046 and $2,373 respectively compared to earnings of immigrants with Canadian education.

Human capital had a positive effect on the earnings of immigrant men with credentials in the fields of natural, applied sciences and engineering, like for immigrants with credentials obtained in education, arts, humanities and social sciences as well as in commerce, management and business administration. Those with Bachelor degree earned $14,346 significantly more and those with Master or PhD degree earned $21,257 more than immigrants without university education. Speaking any of the Canadian official languages as the first language also brought a net advantage of about $2,000 compared to those who learned English or French as their second language. Each additional year spent in Canada since immigration increased annual earnings by about $400.

Visible minority immigrant men in these fields of study, similar to immigrant men with education in other fields of study, suffered a net loss of $6,714 a year compared to their majority member counterparts. Living in three largest metropolitan areas such as Toronto, Vancouver and Montreal, in contrast to immigrant men with education in social sciences and business administration, did not bring a net advantage in earnings, Immigrants from top three cities earned about $500 significantly less than those residing in smaller metropolitan and nonmetropolitan areas. Married men netted an additional $9,569 a year compared to not married immigrant men.

Those who worked full-time and more weeks a year earned substantially more than those who worked part-time and fewer weeks a year respectively. Full-time workers earned $31,346 more than part-time employees. Each additional week worked in a year increased annual employment income by about $950.

The results on gross and net earnings for immigrant women who obtained educational credentials in natural, applied sciences and engineering are reported in Table 5.7 Similar to

immigrant men in the same fields of study and immigrant women with education in business administration and social sciences, credentials attained in the USA and Northern and Western Europe brought a significant advantage in gross earnings (Model 1, Table 5.7). Immigrant women with the US and Northern and Western European education earned $5,966 and $9,164 respectively more than those with Canadian education in the fields of natural, applied sciences and engineering. On the other hand, gross earnings of immigrants with other types of foreign credentials were substantially less than those of immigrant women who held Canadian credentials, varying from about $10,000 less for immigrant with education obtained in Eastern and Southern Europe to about $6,000 less for women with Southern Asian educational credentials.

After adjusting for human capital, individual and work-related variations (Model 2, Table 5.7), educational credentials obtained in the United States and Northern and Western Europe continued to bring a significant earnings advantage over Canadian credentials. Immigrant women with education from the USA and Northern and Western Europe earned about $3,000 and $10,000 respectively more than their counterparts who studied in Canada and got education in the fields of natural, applied sciences and engineering. Immigrant women with foreign credentials from other parts of Europe, Asia and Other regions still earned substantially less than those with Canadian education, varying from about $2,000 less for immigrants with credentials attained in Other regions to about $6,000 less for women with education from Eastern and Southern Europe.

To be expected, immigrant women with higher level of education tended to have significantly higher employment income. Those with Bachelor degree and Master or PhD degree earned about $13,000 and $19,000 respectively more than those who held lower than Bachelor degree. Then, for immigrant women with credentials in natural sciences and engineering, in contrast to those who achieved education in social sciences and business administration, speaking English or French as the first language did not bring an earnings advantage. Those for whom Canadian official languages were second languages earned about $2,000 significantly more than immigrant women who studied these languages as their first ones. Each year in Canada since immigration increased annual earnings by about $700.

Visible minority immigrant women, similar to visible minority immigrant men with education in the same fields and women with education in commerce, management and business administration and contrary to women with credentials in education, arts, humanities and social sciences, suffered a net loss of about $500 a year compared to their majority member counterparts. Then, living in three largest census metropolitan areas such as Toronto, Vancouver, and Montreal brought immigrant women significant earnings benefits of about $6,000 a year over those residing in smaller or nonmetropolitan areas. Like for immigrant men in these fields of study, marital status variable had a positive impact on the economic performance of immigrant women. The average employment income of married women was significantly higher than the average income of not married women by $6,592.

Work-related variations had a positive effect on the earnings of immigrant women with education in natural, applied sciences and engineering. The data indicate that full-time employees earned about $17,000 a year more than part-time workers. Each additional week worked in a year brought an annual increase of about $550, controlling for the effects of all other independent variables.

5.4. Findings for Immigrant Men and Women with Credentials in Health Fields

The results on gross and net earnings for immigrant men who obtained educational credentials in health fields are reported in Table 5.8. The data indicate that there were huge gross earnings disparities among immigrant men with educational credentials attained in different world regions (Model 1, Table 5.8). Only immigrants with foreign credentials from Northern and Western Europe had significantly larger gross earnings than immigrants with Canadian education. The difference in earnings between immigrant men with the US and Canadian credentials was not found to be statistically significant. However, compared to immigrant men who studied in health fields in Canada, immigrants with other than Northern and Western European credentials earned substantially less, varying from $78,163 less for immigrant men with education from Eastern and South-Eastern Asia to $37,532 less for those with credentials from Other regions.

After controlling for human capital, individual and work-related variations (Model 2, Table 5.8), the earnings disparities among different immigrant groups were still substantial. All

types of foreign credentials were valued significantly less in the labour market than Canadian credentials in health fields. Compared to immigrant men with Canadian education, immigrant men with educational credentials from the USA and Northern and Western Europe also earned less, but they did better than immigrant men with foreign credentials attained in other world regions. For example, male immigrants with education from the US earned about $4,000 less than immigrant men with Canadian credentials whereas immigrant men with credentials from Eastern and Southern Europe earned about $60,000 less than their counterparts who studied in Canada, and immigrant men with credentials from Eastern and South-Eastern Asia earned about $49,000 less.

In contrast to immigrant men with education in social sciences, business administration and natural sciences, in health fields, immigrant men with Bachelor degree suffered a net loss of $6,915 while Master or PhD degree still brought a great annual increase of $43,484, compared to immigrants with the level of education lower than a university degree. Next, similar to immigrant men with education obtained in natural, applied sciences and engineering, speaking any of the Canadian official languages as the first language did not have a positive effect on earnings. It brought a net penalty in earnings of $36,575. Each year in Canada since immigration increased annual employment income by about $2,000.

Visible minority immigrant men with credentials in health fields, like with education in other fields of study, earned $8,092 significantly less than those of majority member background. Similar to immigrant men in natural sciences and engineering, living in three largest Canadian cities did not bring a net advantage. Those from Toronto, Vancouver and Montreal earned $7,142 less than immigrant men residing in other Canadian regions. Compared to not married immigrant men, married men earned $40,820 substantially more.

To be expected, work-related variations had a positive effect on immigrants' earnings in these fields of study. The data indicate that immigrant men who worked full-time and more weeks in a year earned significantly more than those who worked part-time and less weeks respectively. Individuals who worked full-time earned $31,603 a year more than part-time employees. For every additional week worked in a year, the average employment income increased by about $640, controlling for the effects of all other independent variables.

The results on gross and net earnings for immigrant women who obtained educational credentials in health fields are reported in Table 5.9. Gross earnings differences (Model 1, Table 5.9) indicate that immigrant women with education obtained in Europe, Southern Asia and Other regions earned significantly more than their counterparts who achieved Canadian education in health fields, varying from $1,202 more for immigrants with Eastern and Southern European credentials to $33,729 more for women with education from Southern Asia. Immigrant women with the US and Eastern and South-Eastern Asian credentials suffered a gross loss of $15,428 and $2,450 respectively compared to those with Canadian credentials.

After controlling for human capital, individual and work-related variations, all foreign credentials, except those obtained in the USA, brought a net advantage compared to Canadian credentials (Model 2, Table 5.9). For example, immigrant women with education attained in Southern Asia earned $14,893 more than women who studied in Canada, and immigrant women with Eastern and Southern European credentials earned 7,858 more. The differences in net employment income between immigrants with educational credentials from Northern and Western Europe and Eastern and South-Eastern Asia and immigrants with education from Canada were found to be not statistically significant. The US credentials brought a net penalty in earnings of $9,798 compared to Canadian credentials.

Furthermore, human capital raised the net earnings for immigrant women with credentials in health fields of study. To be expected, immigrant women with a higher level of education had substantially higher annual employment income. Those who had Bachelor degree and those with Master or PhD degrees earned about $7,000 and $28,000 respectively more than immigrants who obtained education lower than Bachelor degree. Immigrant women whose first language was English or French netted an additional $2,325 a year compared to those who learned any of the Canadian official languages as a second language. Each year of living in Canada since immigration increased immigrants' employment earnings by about $600 a year.

Similar to immigrant women with credentials in education, arts, humanities and social sciences and contrary to immigrant women with education obtained in business administration and natural sciences, visible minority immigrant women did not suffer from earnings disadvantage compared to majority member immigrant women. They earned about $3,000 more than their majority member counterparts. Then, living in three largest census metropolitan areas

such as Toronto, Vancouver, and Montreal brought immigrant women significant earnings benefits of $5,480 a year over those residing in smaller or nonmetropolitan areas. Like for immigrant men and women in other fields of study, marital status variable had a positive impact on the economic performance of immigrant women. The average employment income of married women was significantly higher than the average income of not married women by $4,516.

Similar to human capital variables, work-related variations had a positive effect on immigrants' earnings. The data show that full-time workers earned about $15,000 a year more than part-time workers. Each additional week worked in a year brought an annual increase of about $450, controlling for the effects of all other independent variables.

5.5. Conclusions

The results, obtained through separate estimations for immigrant men and women with education in different major fields of study, indicate that there were significant gross earnings differences among immigrant men and women with educational credentials attained in different world regions. Some types of foreign credentials brought immigrant men as well as women an advantage in gross earnings compared to the earnings of immigrant men and women with Canadian credentials.

Among immigrant men, immigrants with educational credentials obtained in the United States in any major field of study had greater gross earnings than their counterparts with Canadian education. Credentials from the Northern and Western Europe brought a gross earnings advantage for immigrants with education attained in three groups of fields of study: 1) in commerce, management and business administration; 2) in natural, applied sciences and engineering; and 3) in health fields compared to immigrant men with Canadian credentials in the same fields of study. According to the results on gross earnings, compared to Canadian credentials, foreign credentials of immigrant men were devaluated the most in health fields followed by credentials obtained in commerce, management and business administration.

Among immigrant women, immigrants with foreign credentials obtained in the USA and in Northern and Western Europe had higher gross earnings compared to women with Canadian education in the fields of study such as: 1) education, arts, humanities and social sciences; 2) commerce, management and business administration; and 3) natural, applied sciences and

engineering. In health fields also education from Eastern and Southern Europe, Southern Asia and Other regions was in advantage. Gross earnings disparities show that, compared to Canadian credentials, foreign credentials of immigrant men were more devaluated than those of immigrant women in the fields of socials sciences, business administration and health. However, the analysis on gross earnings also demonstrates that foreign credentials from the USA and Northern and Western Europe obtained in the majority fields of study could have a positive effect on the earnings of both immigrant men and women.

When human capital, individual and work-related variations were controlled, substantial disparities in earnings among immigrant men and women with educational credentials attained in different world regions in various fields of study still existed. Some types of foreign credentials of immigrant men and women continued to bring them an earnings advantage in the labour market in comparison to the Canadian education of immigrants.

Among immigrant men, foreign credentials in health fields were the most devaluated compared to Canadian credentials. There were huge earnings disparities between immigrants with foreign credentials and those with Canadian education. All types of foreign credentials obtained in health fields brought a net penalty in earnings. It suggests that for health professionals such as doctors, that immigrant men usually are in their home countries, the process of requalification of foreign education and experience is the most difficult in Canada in comparison to foreign education obtained in other fields of study.

Then, among immigrant men with education accomplished in the fields of commerce, management and business administration, only foreign credentials from Northern and Western Europe brought immigrant men a net advantage in earnings compared to earnings of immigrants with Canadian credentials. Immigrants with other types of foreign credentials earned significantly less than their counterparts who studied in Canada. It means that despite the fact that many professions which need education in the fields of commerce are not regulated and do not require Canadian licenses, employers do not value foreign credentials equally with Canadian education.

However, in the fields of social sciences as well as in natural sciences immigrant men with credentials attained in the world regions other than the USA and Northern and Western Europe could benefit from education achieved in their home countries. Immigrants with

education from Eastern and Southern Europe and Eastern and South-Eastern Asia in the fields of social sciences and those with credentials obtained in Other regions in the fields of natural sciences and engineering had higher net employment income than immigrant men with Canadian credentials in these fields of study.

Among immigrant women with education obtained in commerce, management and business administration, all foreign credentials, excepting the US credentials, brought a net penalty in earnings compared to Canadian credentials. Significant devaluation of foreign credentials was also found among women who held credentials in natural, applied sciences and engineering. Only immigrant women with education attained in the USA and Northern and Western Europe earned more than those with Canadian education in these fields of study. In the fields of education, arts, humanities and social sciences, foreign credentials from the US and Europe brought a positive effect on women earnings. In health fields, contrary to immigrant men whose foreign credentials were valued substantially less than Canadian credentials, immigrant women with different types of foreign credentials earned more than their counterparts with Canadian education. Probably, it relates to the fact that immigrant women mostly get Canadian education as nurses and caregivers while men reach higher level of health professions. On the other hand, immigrant women with foreign education in health fields often accept lower level positions in Canada even though they could work as doctors and other high level specialists in their home countries whereas immigrant men try to get Canadian licenses as doctors or find a job in other fields rather than working as caregivers.

Thus, for immigrant men with foreign credentials in health fields and in commerce, management and business administration and for immigrant women with foreign education also in the fields of commerce, management and business administration as well as in natural, applied sciences and engineering, it was the most difficult to get foreign credentials recognized by licensed bodies and employers. In addition, both immigrant men and women with education from the USA and Northern and Western Europe in different fields of study, compared to immigrants with other types of foreign credentials, had more chances to enjoy an earnings premium over their counterparts with Canadian education

For immigrant men and women with credentials in different fields of study, human capital variables such as the level of education and years in Canada since immigration had an

incremental impact on earnings. Speaking any of the Canadian official languages as the first language was in advantage for immigrant men and women with education in majority fields of study, excluding men with credentials in health fields and women with education obtained in natural, applied sciences and engineering.

Visible minority immigrant men with credentials in all fields of study and visible minority women with education attained in commerce, management and business administration as well as in natural, applied sciences and engineering suffered an earnings penalty compared to their majority member counterparts. Then, residing in three largest metropolitan cities such as Toronto, Vancouver and Montreal brought a net advantage to immigrant women and the majority of immigrant men, except men who held educational credentials in natural, applied sciences and engineering and in health fields. The average employment income of married immigrant men and women with all the types of educational credentials was higher than income of not married immigrants. To be expected, work-related variations had a positive effect on earnings of immigrant men and women with education attained in all fields of study. The data show that immigrants who worked full-time and more weeks in a year earned substantially more than those who worked part-time and less weeks respectively.

Table 5.1. **Field of Study by Gender**

Fields of Study	Men		Women	
	Number	Percent	Number	Percent
Educ., arts, humanities & soc. Sciences	154940	20	249310	36
Commerce, management & business adm.	148440	19	190680	28
Natural, applied sciences & engineering	443980	56	134040	19
Health fields	39240	5	117420	17
Total	786600	100	691450	100

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre. Sample weights are applied.

Table 5.2. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Men with Credentials in Education, Arts, Humanities and Social Sciences**

Independent variables	Model 1	Model 2
Education from world regions		
Canada (ref.)		
USA	3,765*	2,869*
Northern & Western Europe	-3,570*	-2,639*
Eastern & Southern Europe	4,060*	10,610*
Eastern & South-Eastern Asia	-21,278*	4,426*
Southern Asia	-13,479*	-4,760*
Other regions	-16,865*	-417
Level of education		
lower than Bachelor degree (ref.)		
Bachelor degree		6,393*
Master or PhD		15,527*
Official language as the first language		8,054*
Years in Canada since immigration		482*
Visible minority status		-10,137*
Marital status		12,608*
Census Metropolitan Area (top 3 CMAs)		8,153*
Weeks worked in 2000		820*
Worked full-time or part-time		20,064*
F-test	1034*	3729*
R Square adjusted	0.038	0.266
Intercept	46,821*	-36,968*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

Table 5.3. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Women with Credentials in Education, Arts, Humanities and Social Sciences**

Independent variables	Model 1	Model 2
Education from world regions		
Canada (ref.)		
USA	43,788*	35,529*
Northern & Western Europe	2,321*	3,499*
Eastern & Southern Europe	-1,970*	8,516*
Eastern & South-Eastern Asia	-16,057*	-9,101*
Southern Asia	-9,421*	-10,058*
Other regions	-11,512*	-5,642*
Level of education		
lower than Bachelor degree (ref.)		
Bachelor degree		1,663*
Master or PhD		15,047*
Official language as the first language		6,951*
Years in Canada since immigration		239*
Visible minority status		4,204*
Marital status		6,676*
Census Metropolitan Area (top 3 CMAs)		6,850*
Weeks worked in 2000		579*
Worked full-time or part-time		16,057*
F-test	6386*	6761*
R Square adjusted	0.133	0.292
Intercept	31,065*	-21,860*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

Table 5.4. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Men with Credentials in Commerce, Management and Business Administration**

Independent variables	Model 1	Model 2
Education from world regions		
Canada (ref.)		
USA	3,308*	-164
Northern & Western Europe	16,564*	14,090*
Eastern & Southern Europe	-18,925*	-12,082*
Eastern & South-Eastern Asia	-16,602*	-4,959*
Southern Asia	-16,665*	-7,922*
Other regions	-22,824*	-7,183*
Level of education		
lower than Bachelor degree (ref.)		
Bachelor degree		7,330*
Master or PhD		29,528*
Official language as the first language		16,059*
Years in Canada since immigration		389*
Visible minority status		-4,750*
Marital status		15,448*
Census Metropolitan Area (top 3 CMAs)		5,178*
Weeks worked in 2000		850*
Worked full-time or part-time		24,005*
F-test	1446*	3442*
R Square adjusted	0.055	0.259
Intercept	54,995*	-43,869*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

Table 5.5. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Women with Credentials in Commerce, Management and Business Administration**

Independent variables	Model 1	Model 2
Education from world regions		
Canada (ref.)		
USA	3,450*	4,852*
Northern & Western Europe	900*	-705*
Eastern & Southern Europe	-9,625*	-5,218*
Eastern & South-Eastern Asia	-11,560*	-7,032*
Southern Asia	-3,810*	-5,118*
Other regions	-7,581*	-1,832*
Level of education		
lower than Bachelor degree (ref.)		
Bachelor degree		4,702*
Master or PhD		21,394*
Official language as the first language		2,910*
Years in Canada since immigration		245*
Visible minority status		-5,639*
Marital status		2,844*
Census Metropolitan Area (top 3 CMAs)		5,794*
Weeks worked in 2000		416*
Worked full-time or part-time		13,204*
F-test	1316*	3160*
R Square adjusted	0.04	0.199
Intercept	35,294*	-2,520*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

Table 5.6. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Men with Credentials in Natural, Applied Sciences and Engineering**

Independent variables	Model 1	Model 2
Education from world regions		
Canada (ref.)		
USA	12,685*	9,041*
Northern & Western Europe	6,737*	1,567*
Eastern & Southern Europe	-5,301*	-6,046*
Eastern & South-Eastern Asia	-14,531*	-2,373*
Southern Asia	-9,203*	-1,791*
Other regions	-6,585*	4,100*
Level of education		
lower than Bachelor degree (ref.)		
Bachelor degree		14,346*
Master or PhD		21,257*
Official language as the first language		1,941*
Years in Canada since immigration		378*
Visible minority status		-6,714*
Marital status		9,569*
Census Metropolitan Area (top 3 CMAs)		-529*
Weeks worked in 2000		952*
Worked full-time or part-time		31,346*
F-test	1836*	7886*
R Square adjusted	0.024	0.211
Intercept	51,544*	-44,887*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

Table 5.7. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Women with Credentials in Natural, Applied Sciences and Engineering**

Independent variables	Model 1	Model 2
Education from world regions		
Canada (ref.)		
USA	5,966*	2,919*
Northern & Western Europe	9,164*	9,731*
Eastern & Southern Europe	-9,930*	-6,102*
Eastern & South-Eastern Asia	-7,713*	-4,064*
Southern Asia	-6,144*	-5,691*
Other regions	-7,837*	-2,271*
Level of education		
lower than Bachelor degree (ref.)		
Bachelor degree		13,149*
Master or PhD		18,921*
Official language as the first language		-2,147*
Years in Canada since immigration		723*
Visible minority status		-505*
Marital status		6,592*
Census Metropolitan Area (top 3 CMAs)		5,683*
Weeks worked in 2000		551*
Worked full-time or part-time		16,991*
F-test	702*	3891*
R Square adjusted	0.03	0.305
Intercept	39,768*	-24,434*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

Table 5.8. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Men with Credentials in Health Fields**

Independent variables	Model 1	Model 2
Education from world regions		
Canada (ref.)		
USA	444	-4,031*
Northern & Western Europe	7,570*	-12,472*
Eastern & Southern Europe	-67,402*	-60,144*
Eastern & South-Eastern Asia	-78,163*	-48,704*
Southern Asia	-47,862*	-20,127*
Other regions	-37,532*	-14,047*
Level of education		
lower than Bachelor degree (ref.)		
Bachelor degree		-6,915*
Master or PhD		43,484*
Official language as the first language		-36,576*
Years in Canada since immigration		1986*
Visible minority status		-8,092*
Marital status		40,820*
Census Metropolitan Area (top 3 CMAs)		-7,142*
Weeks worked in 2000		641*
Worked full-time or part-time		31,603*
F-test	1366*	3159*
R Square adjusted	0.173	0.547
Intercept	89,517*	-58,185*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

Table 5.9. **Effects of Human Capital, Individual and Work-related Variables on Employment Earnings for Immigrant Women with Credentials in Health Fields**

Independent variables	Model 1	Model 2
Education from world regions		
Canada (ref.)		
USA	-15,428*	-9,798*
Northern & Western Europe	2,416*	342
Eastern & Southern Europe	1,202*	7,858*
Eastern & South-Eastern Asia	-2,450*	181
Southern Asia	33,729*	14,893*
Other regions	7,347*	9,628*
Level of education		
lower than Bachelor degree (ref.)		
Bachelor degree		7,329*
Master or PhD		27,872*
Official language as the first language		2,325*
Years in Canada since immigration		618*
Visible minority status		2,772*
Marital status		4,516*
Census Metropolitan Area (top 3 CMAs)		5,480*
Weeks worked in 2000		451*
Worked full-time or part-time		15,315*
F-test	763*	4110*
R Square adjusted	0.037	0.345
Intercept	38,011*	-18,594*

Source: Ethnic Diversity Survey, Analytical File, Saskatchewan Research Data Centre.
Sample weights are applied.
*significant at $p < 0.05$

6. CONCLUSION

Numerous studies have been conducted to examine the economic performance of immigrants in Canada. Complementing to the body of literature, the objective of the present study is to assess the market worth of immigrants' credentials obtained in different world regions using data from the 2002 Ethnic Diversity Survey. In addition, this study attempts to understand the market value of immigrants' credentials in different fields of study.

The major findings indicate that there are significant gross and net earnings differences among immigrant men and women with educational credentials attained in different world regions. Moreover, when foreign credentials are compared to Canadian credentials of immigrants, foreign credentials from Asian and other regions of immigrant men are more devaluated than those of immigrant women according to the results of both gross and net employment earnings.

The analysis also demonstrates that some types of foreign credentials of immigrant men and women can bring them an earnings advantage in the labour market in comparison to the Canadian education of immigrants. Immigrant men with educational credentials from the US and Northern and Western Europe and women with credentials from the USA and all parts of Europe had greater earnings than their counterparts with Canadian credentials. These results refine the conclusion that foreign credentials do not necessary bring a negative impact on immigrants' earnings (Li, 2008).

The findings on the market worth of immigrants' credentials in different fields of study indicate that there are significant gross earnings disparities among immigrant men and women with educational credentials attained in different world regions. Foreign credentials from the USA and Northern and Western Europe obtained in the majority fields of study had a positive effect on the earnings of both immigrant men and women. The results on gross earnings also show that foreign credentials of immigrant men are more devaluated than those of immigrant women in the fields of socials sciences, business administration and health.

When human capital, individual and work-related variations are controlled, substantial disparities in earnings among immigrant men and women with educational credentials attained in different world regions in various fields of study still exist. Immigrant men with foreign credentials in health fields and in commerce, management and business administration and immigrant women with foreign education also in the fields of business administration as well as in natural, applied sciences and engineering had the most difficulties to getting foreign credentials recognized. However, some types of foreign credentials of immigrant men and women continue to bring them an earnings advantage in the labour market in comparison to the Canadian education of immigrants. Both immigrant men and women with education from the USA and Northern and Western Europe in different fields of study, compared to immigrants with other types of foreign credentials, had more chances to enjoy an earnings premium over their counterparts with Canadian education

In conclusion, the present study suggests that the market value of immigrants' foreign credentials varies depending on the world region where the credentials were obtained and, also, depending on the major field of study in which these credentials were obtained. Some types of foreign credentials of immigrant men and women can bring them an earnings advantage in the labour market in comparison to the Canadian education of immigrants.

Taking into account the structure tradition of the political economy approach, the results indicate that immigrants as the subordinate members in Canadian society are subjected to many unequal treatments including formal education. The relationship between education and income can be considered as one of the determinants of educational inequality associated with immigrant population in Canada.

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